

close behind hind maxillary end;
3 veiled equidistant branchiostegals;
5 pectorals, level except last which little
elevated or before ventral fin origin;
1 suprapectoral, little nearer pectoral
fin origin than lateral line and slightly
behind lower subpectoral; 2 subpectorals,
first or lower over second pectoral and
upper close before bases of lowest pectoral
fin rays; 4 ventrals, level, first
interspace longest, third shortest; 1
supraventral, slightly below middle of
space between lateral line and ventral
fin base; 10 + 6 anals, posteroanals
behind anal fin base; 3 supraanals,

in inclined line, first or lowest little nearer fourth ventral than median, which in turn closer to first than to uppermost, which close below lateral line opposite anal fin origin; 1 posterolateral, above and close before last anteroanal, also close below lateral line; 2 low close set precaudals at lower rudimentary caudal fin rays. Supracaudal luminous scales 6.

D. III, 10, I, first branched ray $1\frac{1}{2}$ to $1\frac{3}{4}$ in head; adipose fin $3\frac{1}{4}$ to $3\frac{4}{5}$; A. III, 15, I, first branched ray 2 to $2\frac{1}{8}$; caudal $1\frac{2}{5}$?, forked; least depth of caudal peduncle $3\frac{1}{2}$ to $3\frac{4}{5}$; pectoral $1\frac{2}{3}$;

ventral 2 to 2 $\frac{1}{5}$.

Brown, scale pockets dusky to blackish. Iris, sides of head and scales silvery, with iridescent tints. Fins all pale to whitish.

Eastern Pacific.

57892 U.S.N.M.

3653

Albatross Collection 3382. Length 50 to 72 mm.

3 examples.

75794 U.S.N.M.

Albatross Collection 4644. Length 28 to 32 mm.

7 examples.

75795 U.S.N.M.

Albatross Collection 4650. Length 23 to 48 mm.
3 examples.

75796 U.S.N.M.

Albatross Collection 4652. Length 43 mm.

75797 U.S.N.M.

Length 40 mm.

75798 U.S.N.M.

Albatross Collection 4718. Length 40 to 45 mm.

2 examples.

75799 U. S. N. M.

3654

Albatross Collection 4714. Length 45 mm.

75800 U. S. N. M.

Albatross Collection 4716. Length 31 mm.

3655

Myctophum affine (Lütken)
Scopelus affinis Lütken, ^{Kon. Danske} Vidensk. Selsk.

— Jordan and Evermann, Bull. U. S. Nat. Mus., no. 4, pt. 1, 1896, p. 570 (compiled). —
Brauer, Zool. Anzeiger, vol. 28, no. 10, Dec. 20, 1904, p. 389 (diagnosis in key).
— Lönnberg, Swed. Südpolar Exped., Fishes, vol. 5, pt. 6, 1905, p. 63 (S. $32^{\circ}15'$ W. $50^{\circ}14'$).
— Silber, [✓] Mem. Carnegie Mus., vol. 26, no. 6, 1908, p. 217 (N. Lat. $1^{\circ}-17^{\circ}$ W. Long. $135^{\circ}-137^{\circ}$; S. Lat. 9° W. Long. $139^{\circ}45'$, Marquesas Islands); Bull. Amer. Mus. Nat. Hist., New York, vol. 30, art. 2, March 10, 1911, p. 14 (S. Lat. 1° W. Long. 118°). — Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1911 (1912), p. 570 (N. Lat. $8^{\circ}37'$ W. 160° ; N. Lat. 5° W. Long. 151°).

3655
Myctophum affine (Lütken)

Scopelus affinis Lütken, ^{Kon. Danske} Vidensk. Selsk.

Skrift. ~~Mat.~~ Kjöbenhavn, ser. 6, vol. 7,

1892, p. 252, fig. 10. Pacific Ocean, China

Sea, east coast of Australia.

Myctophum affine Goode and Bean, Oceanic

Ichth., 1895, p. 72 (compiled). — Gilbert,

Mem. Carnegie Mus., vol. 26, no. 6, 1908, p.

217 (N. Lat. 1° – 17° W. Long. 135° – 137° ; S.

Lat. 9° W. Long. $139^{\circ}45'$, Marquesas Islands);

Bull. Amer. Mus. Nat. Hist., New York,

vol. 30, art. 2, March 10, 1911, p. 14 (N. Lat.

1° W. Long. 118°). — Fowler, Proc. Acad.

Nat. Sci. Philadelphia, 1911 (1912), p. 570

(N. Lat. $8^{\circ}37'$ W. 160° ; N. Lat. 5° W. Long. 151°).

— Gilbert, Mem. Carnegie Mus., vol. 6,
no. 2, 1913, p. 76 (N. Lat. 29° — 33° E. Long.
 129° — 142° , off Japan). — Weber, Siboga
Exped., vol. 57, Fische, 1913, p. 87 (Banda
Sea, in 1500 meters). — Weber and
Beaufort, Fishes Indo Austral. Archipelago,
vol. 2, 1913, p. 161 (Weber's materials). —
Gilbert, Proc. U. S. Nat. Mus., vol. 48, 1915,
p. 312 (Catalina, California). — Jordan
and Jordan, Mem. Carnegie Mus., vol. 10.

— Taaning, Vidensk. Medd. Dansk naturh.
Foren. København, vol. 86, 1928, p. 325
(North Atlantic; diagnosis in key).

Bull. Bingham Oceanogr. Collection,
vol. 3, art. 3, Dec. 1928, p. (65) 69, text

— Gilbert, Mem. Carnegie Mus., vol. 6,
no. 2, 1913, p. 76 (N. Lat. 29° — 33° E. Long.
 129° — 142° , off Japan). — Weber, Siboga
Exped., vol. 57, Fische, 1913, p. 87 (Banda
Sea, in 1500 meters). — Weber and
Beaufort, Fishes Indo Austral. Archipelago,
vol. 2, 1913, p. 161 (Weber's materials). —
Gilbert, Proc. U. S. Nat. Mus., vol. 48, 1915,
p. 312 (Catalina, California). — Jordan
and Jordan, Mem. Carnegie Mus., vol. 10,
no. 1, 1922, p. 11 (reference). — Fowler and
Ball, Bull. Bishop Mus., vol. 26, 1925,
p. 7 (Pearl and Hermes Reef). — Parr,
Bull. Bingham Oceanogr. Collection,
vol. 3, art. 3, Dec. 1928, p. (65) 69, text

figs. 8-9 (Off New Providence, Tongue
of the Ocean, Green Cay, Cat Island,
San Salvador, Crooked Island,
Acklin Island, West Caicos Island,
Turks Island). — Fowler, Mem.

Bishop Mus., vol. 10, 1928, p. 69 (not
fig. 13 of young) (Honolulu; Pearl and
Hermes Reef; type of Rhinoscopelus oceanicus).

— Horman, Ann. Mag. Nat. Hist., ser. 10,
vol. 4, Nov. 1929, p. 514 (Zanzibar; north
of Admiralty Island; between Admiralty
Island and Papua). — Parr, Proc.
U. S. Nat. Mus., vol. 76, 1929, p. 11 (types
of Rhinoscopelus oceanicus and Myctophum
margaritatum). — Horman, Discovery
Rept., vol. 2, 1930, p. 325 (S. $46^{\circ}36'30''$ N.
 $45^{\circ}7'$, 5 meters; N. $12^{\circ}8'$ W. $20^{\circ}53'30''$,
200 to 300 meters).

Myctophum (Myctophum) affine
Branner, Deutsch. Tiefsee Exped.
Valdivia, vol. 5, Tiefsee Fische,
1906, p. 190, text figs. 105 to 107
(photophores) (Cape Verde; Gulf
of Guinea, Benguela; west of Chagos
Archipelago; east and west of Seychelles).

— Murray and Hjort, The Depths of the
Ocean, 1912, p. 613 (south of Azores, 2865
meters). — Pappenheim, Deutsch.

Nordpolar Exped., vol. 15, pt. 2, 1914, p.
193 (N. $15^{\circ}50'$ W. $25^{\circ}23'$, Cape Verde
Islands; S. $5^{\circ}59'$ W. $17^{\circ}39'$, south west
of Sierra Leone).

3659

Scopelus caninianus (not Valenciennes) Günther,
Rep. Voy. Challenger, vol. 31, pt. 2, 1889,
p. 30 (part; neighborhood of New Guinea;
passage to the Admiralty Islands).

Scopelus coccoi (not Cocco) Günther,
Rep. Voy. Challenger, vol. 31, pt. 2, 1889,
p. 30 (part; near the Admiralty
Islands).

Myctophum opalinum Goode and Bean,
Oceanic Ichth., 1895, pp. 72, 511, pl. 22,
fig. 81. N. 38° to 39° W. 71° to 72° , 542 to
1536 fathoms. — Waite, Records Australian
Mus., vol. 5, pt. 3, 1904, p. 153 (Lord

Howe Island). — Breder, Bull. Bingham
Oceanogr. Collection, vol. 1, art. 1, Oct. 19,
1927, p. 17 (Green Cay and St. Francis, Isle
of Pines).

Myctophum nitidulum Garman, Mem.
Mus. Comp. Zool., vol. 24, 1899, p. 266, pl.
56, fig. 3. h. Lat. $27^{\circ}50'$ W. Long. $145^{\circ}45'$
 $30''$.

Rhinoscopelus oceanicus Jordan and
Evermann, Bull. U. S. Fish Comm., vol. 22,
1902 (1903), p. 161. h. Lat. $10^{\circ}57'$ W. Long.
 $137^{\circ}35'$ (south east of Hawaii).

Myctophum margaritatum Gilbert, Bull.
U. S. Fish Comm., vol. 23, pt. 2, 1903 (1905),
p. 596, pl. 68, fig. 2. South of Lanai; west of
Oahu; west of Nihoa; southwest of French
Frigate Shoals; near Laysan Island;
south of Oahu; between Honolulu and San
Francisco; all at surface.

3661

Depth 4 to $4\frac{1}{2}$; head $3\frac{1}{4}$ to $3\frac{4}{5}$,
width 2 to $2\frac{1}{5}$. Snout $5\frac{1}{4}$ to 7 in
head from snout tip; eye $2\frac{3}{5}$ to 3,
much greater than snout or interorbital;
maxillary reaches eye diameters
behind eye though not quite to little
inclined hind preopercle edge, slender,
length $1\frac{1}{2}$ to $1\frac{2}{3}$ in head; interorbital
3 to $3\frac{1}{8}$, concave. Gill rakers 6 + 16,
slender, lanceolate, $1\frac{1}{2}$ in eye; gill
filaments $\frac{3}{4}$ gill rakers.

Scales 37 to 40 in lateral line,
little enlarged; 4 above, 4 below, 13 or 14
predorsal. Small scales on caudal
base. Scales with 5 or 6 basal radiating

(between New Amsterdam and Cocos Islands). — Barnard, Ann. South

African Mus., vol. 21, pt. 1, June 1925, p. 241 (off Cape Point).

— Zugmayer, Res. Camp. Sci. Monaco, vol. 35, 1911, p. 22 (between Azores and Spain).

striae; circuli very fine, incomplete apically.

One median, minute preocular photophore; 2 operculars, upper little larger; 3 veiled equidistant branchiostegals; 5 pectorals, usually ~~at third~~ and fourth little closer than others; 1 suprapectoral, much nearer pectoral fin origin than lateral line, over or slightly posterior to lower subpectoral; 2 subpectorals, first or lower opposite second pectoral photophore, upper before lowest pectoral fin ray bases; 4 ventrals, equidistant; 1 supraventral, midway to lower $\frac{2}{5}$ between ventral fin axil and lateral line;

Myctophum phengodes (Lütken)

Scopelus phengodes Lütken, Kon. Dansk.
Vidensk. Selsk. Skrift. Kjöbenhavn.

ser. 6, vol. 7, no. 6, 1892, p. 253, fig. 11.

S. $25^{\circ}50'$ E. $102^{\circ}50'$.

Myctophum phengodes Goode and Bean,
Oceanic Ichth., 1895, p. 73 (compiled). —

Waite, Records Austral. Mus., vol. 5, 1903,
p.

— Parr, Bull. Bringham Oceanogr. Collection,
vol. 3, art. 3, 1928, p. 66 (diagnosis in key).

— Horman, Discovery Rep., vol. 2, 1930, p.
326 (S. $33^{\circ}53'45''$ E. $9^{\circ}26'30''$, 1000 meters).

8 to 10 + 5 to 7 anals, most or all
posteroanals behind anal fin base;
3 supraanals in inclined line with
last ventral photophore and uppermost
at or close below lateral line; 1
posterolateral close below lateral line,
little before or little behind last
posteroanal; 2 low close set precaudals.
Supracaudal luminous scales 5 or 6.

D. III, 9, I or III, 10, I, first branched
ray $1\frac{1}{2}$ to $1\frac{3}{4}$? in head; adipose fin
3 to 4; A. III, 16, I or III, 17, I, first
branched ray $2?$ to $2\frac{2}{5}$; caudal
damaged, less than head; least depth
of caudal peduncle $3\frac{1}{8}$ to $4\frac{1}{8}$; pectoral

1 ²/₃ to 1 ³/₄; ventral 2 ¹/₈ to 2 ²/₅. 3664

Dusky brown above, grayish where scales have fallen or with dark dots. Sides of head and body silvery, usually dotted with dusky. Scales with iridescent tints. Iris silvery white. Opercle silvery. Fins dull brownish, caudal base dark.

Indian, Pacific and Atlantic Oceans.
Brauer gives the anal photophores as
7 + 4 to 7, 8 + 3 to 7 and 9 + 4 to 10 and
10 + 6.

D. 5530. Balicasag Island (C.),
N. 32° E., 4.3 miles (N. $9^{\circ}26'45''$ E.
 $123^{\circ}38'30''$), between Siquijor and
Bohol Islands. August 11, 1909. Length
18 to 20 mm. 4 examples.

D. 5531. Balicasag Island (C.),
N. 43° E., 4.2 miles (N. $9^{\circ}27'30''$ E.
 $123^{\circ}38'00''$). August 11, 1909. Length 23 mm.

D. 5611. Buha Buha Island (F.)
S. 43° W., 6.4 miles (S. $0^{\circ}40'30''$ E. 121°
 $50'00''$), Gulf of Tomini, Celebes.
November 19, 1909. Length 25 mm.

D. 5195. Capitanillo Island Light,
N. 11.75 miles (N. $10^{\circ}47'$ E. $124^{\circ}06'30''$), off
northern Cebu Island. April 3, 1908.
Length 22 mm.

3666

D. 5176. Escarceo Light, S. $57^{\circ}E.$, 7 miles (N. $13^{\circ}35'15''E.$, $120^{\circ}53'20''$), Verde Island Passage. In 260 fathoms. March 24, 1908. Length 18 or 19 mm. 2 examples.

D. 5177. Escarceo Light, S. $53^{\circ}E.$, 5.80 miles (N. $13^{\circ}35'E.$, $120^{\circ}54'36''$). In 260 fathoms. March 24, 1908. Length 30 mm.

D. 5258. Juraopirao Island (S.), S. $75^{\circ}W.$, 16.25 miles (N. $10^{\circ}27'45''E.$, $122^{\circ}12'30''$), off southern Panay. June 2, 1908. Length 18 to 35 mm. 11 examples.

D. 5653. Lamulu, S. $40''E.$, 18 miles (S. $4^{\circ}27'36''E.$, $121^{\circ}16'36''$), Gulf of Boni, Celebes. December 17, 1909. Length 20 to 25 mm. 2 examples.

D. 5232. Limasana Island (S.), ³⁶⁶⁷S.

69° E., 20.60 miles (N. 10° 00' 45" E. 124° 44' 06"), between Bohol and Leyte. May 7, 1908. Length 19 mm.

D. 5185. Lusaran Light, N. 23° E., 25.50 miles (N. 10° 05' 45" E. 122° 18' 30"), between Panay and Negros. In 638 fathoms. March 30, 1908. Length 15 mm. 2 examples.

D. 5186. Lusaran Light, N. 20° E., 37.80 miles (N. 9° 53' 30" E. 122° 15' 30"). March 30, 1908. Length 28 to 35 mm. 6 examples.

D. 5223. Malabrigo Light, W., 9.80 miles (N. 13° 36' E. 121° 25' 30"), between Marinduque and Luzon. April 24, 1908. Length 15 to 19 mm. 7 examples.

3668

D. 5128. Hogar Island (W.), N. 6° E.,
32.50 miles (N. $90^{\circ}52'10''$ E. $121^{\circ}49'35''$),
Sulu Sea vicinity southern Panay.

February 4, 1908. Length 16 to 22 mm. 4 examples.

D. 5227. Point Origan, S. 44° E., 18.30
miles (N. $12^{\circ}53'45''$ E. $121^{\circ}52'30''$), east of
Mindoro. In 322 fathoms. May 5, 1908.

Length 15 mm.

3669
7246 U.S.N.M. N. $39^{\circ}51'30''$ W. $70^{\circ}17'$,

Gulf Stream. Bureau of Fisheries.

Length 30 to 38 mm. 4 examples.

37504 U.S.N.M. Cuba. Prof. F. Poey.

Length 49 mm.

39484 U.S.N.M. N. 39° W. 71° ,

Gulf Stream. Albatross Collection 2583.

Length 48 to 55 mm. 2 examples.

43774 U.S.N.M.

Gloucester Donation 404. Length 113 mm.

43785 U.S.N.M. N. 41° W. 65°

Gulf Stream. Albatross Collection 2528. Length 43 mm.

43798 U.S.N.M.

Albatross Station 2585. Length 35 to 54 mm. 9 examples.

43799 U.S.N.M. N. $36^{\circ}45'$ W. $74^{\circ}28'30''$, Gulf

Stream. Albatross Collection 2731. Length 22 to

51 mm. 30 examples.

Sta. (5176.D.) Escarceo Light., S. 57°
E., 7 miles ($13^{\circ} 35' 15''$ N., $120^{\circ} 53'$
 $20''$ E.), Verde Island Passage, in
200 fathoms. March 24, 1908. 2 examples,
17 to 18 mm.

Sta. D. 5195. Capitanillo Island
Light, N. 11.75 miles ($10^{\circ} 47' N.$, $124^{\circ} 06'$
 $30''$ E.), off northern Cebu Island, in
no sounding. April 3, 1908. Length 21 mm.

Sta. D. 5531. Balicasag Island (C.),
N. 43° E., 4.2 miles ($9^{\circ} 27' 30''$ N., 123°
 $38^{\circ} 00''$ E.), between Siquijor and
Bohol Islands, in no sounding.
August 11, 1909. Length 22 mm.

43800 U.S.N.M. N. 38°

W. 71°

3670

Albatross Collection 2719. Length 26 to 46 mm.
2 examples.

43802 U.S.N.M. N. 38°25' W. 72°40', Gulf
Stream. Albatross Collection. Length 46 mm.

43803 U.S.N.M. N. 39°22' W. 71°23'36",
Gulf Stream. Albatross Collection.
Length 34 mm. Very poorly preserved.

43804 U.S.N.M. N. 39° W. 71°
Gulf Stream. Albatross Collection 2685.
Length 33 to 46 mm. 2 examples.

43807 U.S.N.M.

Albatross Collection 2727. Length 22 to 40 mm.
21 examples.

43808 U.S.N.M. N. 37° W. 73°

Albatross Collection 2742. Length 36 to 47 mm.
3 examples.

43809 U.S.N.M. N. 42° 20' W. 65° 07'

Albatross Collection 2522. Length 34 mm.

44504 U.S.N.M. N. 32° 40' W. 76° 40'

Albatross Collection . Length 90 mm. 2 examples.

50622 U.S.N.M. N. 10° 57' W. 137° 35';

south of Hawaii. Length 32 mm. Type of
Rhinocephalus oceanicus.

51520 U.S.N.M.

Albatross Collection . Length 45 mm.

51528 U.S.N.M.

Albatross Collection 3926. Length 23 to 44 mm.
4 examples.

Sta. D. 5232. Limasana Island
(S.), S. 69° E., 20.60 miles ($10^{\circ}00'45''$
N., $124^{\circ}44'6''$ E.), between Bohol and
Leyte. May 7, 1908. Length 21 mm.

Sta. 5227. Point Orizon, S. 44° E., 18.30
miles ($12^{\circ}53'45''$ N., $121^{\circ}52'30''$ E.),
in 322 fathoms.
east of Mindoro, May 5, 1908. Length
16 mm.

Sta. D. 5530. Balicasag Island (C.)
N. 32° E., 4.3 miles ($9^{\circ}26'45''$ N., $123^{\circ}38'$
 $30''$ E.), between Siquijor and Bohol
Islands. August 11, 1909. 4 examples
19 to 20 mm.

51529 U.S.N.M.

Albatross Collection 4010. Length 27 to 48 mm.

3 examples.

51530 U.S.N.M.

Albatross Collection 3931. Length 25 mm.

51532 U.S.N.M.

Albatross Collection 3927. Length 24 to 33 mm.

2 examples.

51533 U.S.N.M.

Albatross Collection 3878. Length 24 to 36 mm.

5 examples.

51534 U.S.N.M.

Albatross Collection 4188. Length 34 to 46 mm.

9 examples.

51531 U.S.N.M.

Albatross Collection 3930. Length 23 mm.

Sta. D. 4392. $33^{\circ}00'50''$ N., $120^{\circ}45'20''$ W., off Southern California, in 2124 fathoms. March 29, 1904. Length 24 mm.

Sta. D. 5611. Buha Buha Island (E.) S. 43° W., 6.4 miles ($0^{\circ}40'30''$ S., $121^{\circ}50'00''$ E.), Gulf of Tomini, Celebes. November 19, 1909. Length 26 mm.

Sta. D. 5177. Escarceo Light, S. 53° E., 5.80 miles ($13^{\circ}35'$ N., $120^{\circ}54'36''$ E.), Verde Island Passage, in 260 fathoms. May 24, 1908. Length 29 mm.

Sta. D. 5653. Lamulu, S. 40° E., 18 miles ($4^{\circ}27'36''$ S., $121^{\circ}16'36''$ E.), Gulf of Boni, Celebes. December 17, 1909. 2 examples 20 to 25 mm.

51535 U.S.N.M.

3673

Albatross Collection 4011. Length 28 to 30
mm. 3 examples.

51536 U.S.N.M. Off south coast of Molokai.

Albatross Collection. Length 77 mm. Type of
Myctophum margaritatum.

74664 U.S.N.M.

Albatross Collection 5052. Length 41 to 56 mm.
6 examples.

74665 U.S.N.M.

Albatross Collection 4927. Length 37 mm.

75775 U.S.N.M.

Albatross Collection . Length 16 to 20 mm.
6 examples.

51535 U.S.N.M.

3673

Albatross Collection 4011. Length 28 to 30
mm. 3 examples.

74663 U.S.N.M.

Albatross Collection 4921. Length 23 to 44 mm.
5 examples.

74664 U.S.N.M.

Albatross Collection 5052. Length 41 to 56 mm.
6 examples.

74665 U.S.N.M.

Albatross Collection 4927. Length 37 mm.

75775 U.S.N.M.

Albatross Collection . Length 16 to 20 mm.
6 examples.

Sta. D. 5128. Hogas Island (W.),
N. 6° E., 32.50 miles ($9^{\circ}52'10''$ N., 121°
 $49'35''$ E.), Sulu Sea vicinity of
southern Panay. February 4, 1908.

Length
~~4 examples~~, 18 to 24 mm. 4 examples).

Sta. D. 5223. Malabrigo Light, W.,
980 miles ($13^{\circ}36'$ N., $121^{\circ}25'30''$ E.),
between Marinduque and Luzon.

April 24, 1908. Length 18 to 20 mm.
7 examples).

Sta. D. 5185. Lusaran Light, N. 23° E.,
25.50 miles ($10^{\circ}05'45''$ N., $122^{\circ}18'30''$
E.), between Panay and Negros, in
638 fathoms. March 30, 1908. Length 15 to
16 mm. 2 examples).

75776 U.S.N.M. N. $1^{\circ}45'$ W. $139^{\circ}36'$ ³⁶⁷⁴

September 9, 1899.

Length 22 to 26 mm. 3 examples.

75777 U.S.N.M. N. $10^{\circ}57'$ W. $137^{\circ}35'$,

September 4, 1899.

Length 18 to 19 mm. 3 examples.

75778 U.S.N.M.

Albatross Collection 4733. Length 53 mm.

75779 U.S.N.M.

Albatross Collection 26. Length 19 mm.

75802 U.S.N.M. S. $14^{\circ}19'$ W. $98^{\circ}46'$

Albatross Collection 4706. Length 26 mm.

As Myctophum nitidulum.

D. 5258. Juraojurao Island (S.),
S. 75° W., 16.25 miles ($10^{\circ}27'45''$ N.,
 $122^{\circ}12'30''$ E.), off southern Panay.

June 2, 1908. Length 18 to 35 mm.

11 examples.

92114 U.S.N.M. From Xiphias stomach
in gully between Browns and Georges Banks.
Schooner "Eleanor". Captain Thomas Brigham.

July 15 - August 5, 1931. W. H. Rich.

Length 96 mm.

A.N.S.P. N. $8^{\circ}37'$ W. 168° .

Dr. W. H. Jones. Length 73 mm.

3676

Myctophum punctatum Rafinesque

Myctophum punctatum Rafinesque,
Ind. Ittiol. Sicil., 1810, pp. 35, 56, pl.
2, fig. 5. Sicily. — Bonaparte, Iconogr.
— ^{vol. 3,}
Fauna Italia, Pesc., pt. 1, fasc. 27,
1840, description, pl., fig. 5 (Italy).
— Goode and Bean, Oceanic Ichth.,
1895, p. 71, pl. 22, fig. 80 (Grand Banks;
off Banquero; N. $44^{\circ}30'$ W. $54^{\circ}35'$; N. $38^{\circ}37'$
W. $73^{\circ}12'$, 224 fathoms; N. $39^{\circ}51'30''$ W. 70°
 $17'$, 571 fathoms; N. $39^{\circ}54'45''$ W. $69^{\circ}29'45''$,
250 fathoms; Messina). — Brauer,
Zool. Anzeiger, vol. 28, no. 10, Dec. 20,
1904, p. 389 (diagnosis in key). —
Fowler, Proc. Acad. Nat. Sci.
Philadelphia, 1911 (1912), p. 570
(Italy; between Greenland and North
America in Lat. N. 60°). — Weber,

and only in front of mandible.
Interorbital moderately narrow.
Gill rakers pointed. Scales
rather small, caducous. Dorsal
and anal opposite, posterior,
anal little longer. Caudal moderate.
Pectoral very small, low. Ventral
small, median.

Diagnosis. Related to subgenus
Bathytroctes but differs chiefly in
its conspicuously larger head.

Alepocephalus; wif eye; with
reference to the large eye.

Siboga Expedition, vol. 57, Fische,
1913, p. 86 (Banda Sea). — Weber
and Beaufort, Fishes Indo
Austral. Archipelago, vol. 2, 1913,
p. 160, fig. 62 (tail) (Weber's material).
— Taaning, Rep. Danish Oceanogr.
Exped. Mediterranean, no. 5, 1918, p. (10)
57, figs. 19-20 (Mediterranean, Messina,
Atlantic). — Vaillant, Rés. Camp.
Sci. Monaco, vol. 52, 1919, p. 130 (N. 46°
 $52'$ W. $50^{\circ} 30' 45''$; N. $38^{\circ} 17'$ W. $26^{\circ} 46' 45''$).
— Parr, Bull. Bingham Oceanogr.
Collection, vol. 3, art. 3, Dec. 1928, p. 65

(compiled). — Taaning, Vidensk.
Medd. Dansk Naturh. Foren.
Kobenhavn, vol. 86, 1928, p. 53 (diagnosis
in key). — Fowler, Mem. Bishop Mus.,
vol. 10, 1928, p. 70 (compiled).

Mictophum punctatum Borodin, Bull.
Vanderbilt Oceanogr. Mus., vol. 1, art. 1, 1928,
p. 11 (Mediterranean Sea; error).

Myctophum (Myctophum) punctatum

Brauer, Deutsch. Tiefsee Exped.

Valdivia, vol. 15, Tiefsee Fische, 1906,

p. 188, text figs. 103-104 (compiled). —

Murray and Hjort, The Depths of the Ocean, 1912, p. 613 (off Morocco; off Cape Blanco; south of Azores; 214 to 2865 meters). — Zugmayer, Rés. Camp.

Sci. Monaco, vol. 35, 1911, p. 26, pl. 1, fig.

7 (N. $36^{\circ}17'$ W. $1^{\circ}58'$, 1800 meters; N. $39^{\circ}32'$

E. $0^{\circ}20'$; N. $39^{\circ}40'$ E. $5^{\circ}56'$). —

Scopelus punctatus Holt and Byrne, Dep. Agric. Techn. Instruct. Ireland, Sci. Investig., 1910, no. 6 (1911), p. 18, fig. 4 (Irish Atlantic Slope, 900 fathoms).

Scopelus caninianus Valenciennes, Hist.

Nat. Poiss., vol. 22, 1849, p. 445. Italy.

— Canestrini, Fauna Italia, Pesci, 1894, p. 123 (Sicily). — Günther,
 Rep. Voy. Challenger,

Vidensk. Medd. Naturh. Foren. Kjöbenhavn, 1891,
 p. 207 (N. $59^{\circ}37'$ W. $15^{\circ}36'$; N. $57^{\circ}31'$ W. $39^{\circ}36'$).

→ Dansk. Vidensk. Selsk. Skrift. Kjöbenhavn,
 ser. 6, vol. 7, no. 6, 1892, p. 251, fig. 9 (between
 New Guinea and Admiralty Islands). —

Carr, Progr. Fauna Medit., vol. 2, 1893, p. 363 (compiled). ✓

— Collett, Rés. Camp. Sci. Monaco, vol. 10, 1896, p. 111
 (Newfoundland Bank; Gulf of Gascony).

pt. 1, 1881, p. 401. Messina.

Scopelus caninianus Valenciennes, Hist.

Nat. Poiss., vol. 22, 1849, p. 445. Italy.

— Günther, Cat. Fishes Brit. Mus., vol. 5,

1864, p. 409 (no locality). — Rep. Voy. Challenger,

vol. 31, pt. 2, 1889, p. 30 (near New Guinea;

→ passage to Admiralty Islands). — Lütken,

Dansk. Vidensk. Selsk. Skrift. København,

ser. 6, vol. 7, no. 6, 1892, p. 251, fig. 9 (between

New Guinea and Admiralty Islands). —

Carr, Prodr. Fauna Medit., vol. 2, 1893, p. 363 (compiled). V

Scopelus heideri Steindachner, Sitz. Abad.

Wiss. Wien, math.-naturw. Classe, vol. 83,

pt. 1, 1881, p. 401. Messina.

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Scopelus mulleri ^(not Gmelin) Goode, Fisher, Industr.
U.S., Nat. Hist. Aquat. Animals, 1884, pl.
203 (figure to left).

Myctophum phengodes (not Lütken) Fowler,
Proc. Acad. Nat. Sci. Philadelphia, 1901, p.
620 (between Greenland and North America).

Myctophum (Myctophum) phengodes Brauer,
Deutsch. Tiefsee Exped. Valdivia, vol. 15,
Tiefsee-Fische, 1906, p. 177 (part).

Stylophthalmus lobianco mazzarelli,
Revist. mens. Pesca, Pavia, vol. 5, 1910,
p.

Depth 4 to $4\frac{1}{3}$; head $3\frac{1}{3}$ to $3\frac{3}{5}$, width 2 to $2\frac{1}{2}$. Snout 5 to 6 in head; eye $2\frac{2}{5}$ to $2\frac{7}{8}$, greater than snout or interorbital; maxillary reaches little beyond eye or not quite to nearly vertical hind preopercle edge, expansion $2\frac{1}{2}$ to 3 in eye, length $1\frac{2}{5}$ to $1\frac{1}{2}$ in head; interorbital $2\frac{3}{4}$ to 4, low. Gill rakers 6 or 7 + 17 to 19, $1\frac{1}{3}$ in eye, gill filaments $\frac{1}{2}$ gill rakers.

Scales 41 or 42 in lateral line, not enlarged; 3 or 4 above, 4 or 5 below, 14 or 15 predorsal to occiput. Pectoral axil with pointed scale $2\frac{1}{4}$ in fin. Small scales well out on caudal base. Scales with 4 basal radiating striae; circuli

moderately fine, incomplete apically.

Two small antorbital photophores, one superior and other inferior on front eye edge; 2 operculars, upper larger and level with lower eye edge and lower subpectoral; 3 equidistant veiled branchiostegals; 5 pectorals, third interspace shortest and first longest; 1 suprapectoral, little nearer lateral line than pectoral fin origin, from which advanced till nearly opposite second pectoral; 2 subpectorals, lower little before suprapectoral and opposite second pectoral or nearer second pectoral than upper subpectoral, which close below and before bases of

lowest pectoral rays; 4 ventrals, equidistant (variably first on left side double); 1 suprapectoral, over ventral base midway between latter and lateral line; 8 or 9 + 8 or 9, anals, most of posteroanals behind anal fin base; 3 supraanals form slightly curved to straight inclined series with first or lowest well above or little before last ventral, second little higher and posterior to first, third opposite anal fin origin close below lateral line; 1 posterolateral, little before or over last anteroanal close below lateral line; 2 precaudals, close together, posterior

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slightly higher. Two to 6 supracaudal
luminous scales in male, female
with 3 or 4 infracaudal.

D. II, 8, I to II, 10, I, first branched
rays $1\frac{1}{5}$ to $1\frac{1}{3}$ in total head length;
adipose fin $4\frac{3}{4}$; A. III, 14, I to III, 19, I,
first branched ray $1\frac{1}{2}$ to $1\frac{3}{4}$; caudal $1\frac{3}{5}$,
forked; least depth of caudal peduncle
 $2\frac{2}{3}$ to $3\frac{1}{8}$; pectoral $1\frac{1}{4}$ to $1\frac{1}{2}$?; ventral
 $1\frac{4}{5}$ to $2\frac{1}{8}$?

Dull brown on skin where scales
have fallen. Silvery white scales,
especially below, with iridescent
reflections. Iris white. Fins uniformly
pale.

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3 examples U.S.N.M. Exhibited at World's Fair, Chicago. Length 65 to 89 mm. 3 examples.

23369 U.S.N.M. Grand Banks.

Schooner "Lizzie". No. 188. Length 64 to 88 mm. 2 examples.

23756 U.S.N.M. Grand Banks.

Washed aboard schooner "Conductor". Lot. 587. 1879. Length 93 mm.

24530 U.S.N.M. N. 43° W. 54° 30'

Washed aboard schooner "David A. Story". January 1880. Length 77 mm.

24646 U.S.N.M. Grand Banks.

H. Clark. Length 88 mm.

24647 U.S.N.M. Grand Banks.

Washed aboard "Plymouth Rock". January 20, 1888. Lot. 608. Length 86 mm.

24648 U.S.N.M. Grand Banks. ³⁶⁸⁷

H. Clark. Length 77 mm.

28999 U.S.N.M.

U.S. Bur. Fisheries. Length 53 to 56 mm.
3 examples.

29982 U.S.N.M. North west part of
Grand Banks. J. Petersen. Length 92 to 93 mm.
2 examples.

35696 U.S.N.M. N. $39^{\circ}54'45''$ W. $69^{\circ}29'48''$

Albatross Collection . Length 62 mm.

40057 U.S.N.M. Messina, Italy.

Royal Zoological Museum of Florence. Length
68 to 79 mm. 8 examples.

43781 U.S.N.M. N. $44^{\circ}30'$ W. $54^{\circ}35'$

Gloucester Fleet, No. 283. Length 90 mm.

43782 U.S.N.M. Banguearea.

Gloucester Fleet. Length 97 mm.

43783 U.S.N.M.

No. 68.

Length 61 mm.

43787 U.S.N.M.

Gloucester Fleet no. 284. Length 92 mm.

43788 U.S.N.M.

Gloucester Fleet.
3 examples.

Length 89 to 100 mm.

44519 U.S.N.M. N. 42° W. 63°

Gloucester Donation 256. Length 62 to 98 mm.
4 examples.

44520 U.S.N.M. N. 44° W. 53°

Gloucester Donation 268. Length 84 and 85 mm.
2 examples.

48851 U.S.N.M. Le Have Bank. 1888.
Schooner "Sarah M. Jacobs". In very poor preservation,
average 60 mm. 35 specimens.

49357 U.S.N.M. Messina, Italy.

In. Bellotti. Length 52 to 78 mm. 5 examples.

53482 U.S.N.M.

Albatross Collection 2711. Length 23 mm.

72469 U.S.N.M. N. $38^{\circ}29'$ W. $71^{\circ}58'$

Albatross Collection 2719. Length 40 mm.

76286 U.S. N.M.

No. 68

Length 50 mm.

82126 U.S.N.M. Edge of St. Peter's Bank.

Schooner "Epes Tarr". June 16, 1880. Gloucester
Donation 739. Length 90 mm.

82241 U.S.N.M. N. $43^{\circ}25'$ W. $61^{\circ}25'$, washed
aboard during a storm. Schooner "Alice W.
Williams." Gloucester. Donation 263.
Length mm.

91844 U.S.N.M. N. $39^{\circ}28'$ W. $71^{\circ}23'30''$
Albatross Collection . . . Length 38 to 43 mm.
8 examples.

Myctophum phengodes (Lütken)

Scopelus phengodes Lütken, Kon. Dansk.

Vidensk. Selsk. Skrift. Kjöbenhavn, ser.

6, vol. 7, no. 6, 1892, p. 253, fig. 11. S. $25^{\circ}50'$

E. $102^{\circ}50'$; S. $31^{\circ}30'$ W. $19^{\circ}30'$; S. $33^{\circ}30'$ W. 11° ; S.

$34^{\circ}20'$ W. $5^{\circ}30'$; S. $40^{\circ}4'$ E. $53^{\circ}20'$; S. $39^{\circ}54'$ E. 41°

$30'$; S. $37^{\circ}30'$ E. $10^{\circ}40'$; S. $33^{\circ}40'$ to $34^{\circ}40'$ E.

$32^{\circ}30'$ to 27° ; S. $30^{\circ}12'$ E. 44° ; S. $27^{\circ}30'$ to $29^{\circ}40'$

E. 98° to $96^{\circ}20'$; S. $22^{\circ}40'$ E. $81^{\circ}50'$.

Sea). — Weber and Beaufort, Fishes
Indo Austral. Archipelago, vol. 2,
1913, p. 163 (Celebes material). — Parr,
Bull. Bingham Oceanogr. Collection, vol. 3,
art. 3, Dec. 1928, p. 63 (compiled). —
Horman, Ann. Mag. Nat. Hist., ser. 10,
vol. 4, Nov. 1929, p. 514 (Zanzibar).

Myctophum asperum (not Richardson)
Winter,

Myctophum phengodes Goode and Bean,
Oceanic Ichth., 1895, p. 73 (compiled). —

Waite, Records Australian Mus., vol. 5, pt. 3,
1904, p. 152 (Lord Howe Island). — Parr,
Bull. Bingham Oceanogr. Collection, vol. 3,
art. 3, December 1928, p. 66 (compiled).

— Horman, Discovery Rep., vol. 2, 1930, p.
326 (S. $33^{\circ}53'45''$ E. $9^{\circ}26'30''$, 1000 meters).

Myctophum (Myctophum) phengodes Brauer,
 Deutsch. Tiefsee Exped. Valdivia, vol.
 15, Tiefsee - Fische, 1906, p. 177, fig. 88
 (S. 33° W. 30° ; Zanzibar; S. $26^{\circ} 3' 6''$ E.
 $93^{\circ} 43' 7''$). — Zugmayer, Res. Camp.
 Sci. Monaco, vol. 35, 1911, p. 22 (between
 Azores and Spain N. 43° W. 19° at
 surface).

Depth $3 \frac{9}{10}$; head $3 \frac{1}{4}$. Snout
 $5 \frac{4}{5}$ in head; eye 3, greatly exceeds
 snout; maxillary reaches very slightly
 behind eye, expansion 4 in eye, length
 from snout tip $1 \frac{2}{3}$ in head; interorbital
 rather low.

Scales cycloid, 38 in lateral line.

Two small antorbital photophores, upper well superior on front eye edge, lower at lower front eye edge; 2 operculars, upper larger and level with lower eye edge; 3 branchiostegals; 5 pectorals, first and second interspaces subequally longest; 1 suprapectoral, slightly nearer lateral line than pectoral fin origin; 2 subpectorals, first lower or level with lower opercular above and posterior to second pectoral, upper little

before third pectoral close before
bases of lowermost pectoral rays;
4 ventrals, equidistant; 1 supraventral,
slightly nearer lateral line than
ventral origin; anals 6 or 7 + 7 to 9,
level, last 3 posteroanals behind
anal fin base; 3 supraanals in
inclined line, equidistant, lowest
little before and above fourth
ventral, median level with ~~supraventral~~
supraventral over vent, uppermost
close below lateral line opposite
anal origin; 1 posterolateral,

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close below lateral line, over
and little posterior from last
anteroanal; 2 separated precaudals,
first low or close above front
rudimentary caudal rays, upper
close below end of lateral line.

D. III, 10, first branched ray $1\frac{3}{5}$
in head; adipose fin $3\frac{3}{5}$; A. III, 17,
first branched ray $2\frac{1}{8}$; caudal $1\frac{1}{5}$,
deeply emarginate; least depth of
caudal peduncle $3\frac{7}{8}$; pectoral $1\frac{1}{4}$;
ventral $2\frac{2}{5}$, inserted below dorsal origin.

Length 23 mm. (Brauer.)
Atlantic, Indian and Pacific Oceans.

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Myctophum parvimanum (Günther)

Scopelus parvimanus Günther, Cat.

Fish. Brit. Mus., vol. 5, 1864, p. 406.

South Sea. — Hutton, Trans. New Zealand Institute, vol. 5, 1872 (1873), p. 269, pl. 15, fig. 90a (Cape Campbell).

Myctophum parvimanum Korman,

Ann. Mag. Nat. Hist., ser. 10, vol. 4,

Nov. 1929, p. 514, fig. 3 (type).

Depth $4\frac{2}{5}$; head $3\frac{2}{5}$. Snout 6 in head; eye $2\frac{1}{2}$, greatly exceeds snout; maxillary extends $\frac{1}{4}$ eye diameter beyond eye, expansion 2 in eye, reaches little beyond preopercle edge, length $1\frac{2}{5}$ in head; interorbital low, eye impinging little on upper profile.

Scales cycloid, 35 in lateral line.

One opercular photophore close above level of upper maxillary edge; 3 branchiostegals; 5 pectorals, first and second closer than others which equidistant; 1 suprapectoral, rather close above and before pectoral fin origin, nearly over third pectoral; apparently 1 subpectoral, slightly before third pectoral and little lower than opercular; 4 ventrals, second little elevated; 1 supraventral, equidistant between lateral line

3498

and ventral base; anals 6 + 6,
level, 4 or 5 posteroanals behind
anal fin base; 3 supraanals,
nearly in straight line but slightly
elevated posteriorly from horizontal,
first spot slightly below level of
supraventral and above posteriorly
second ventral, second spot slightly
above level of supraventral and behind
third ventral, uppermost spot close
below lateral line above and posterior
to first anal; 1 posterolateral
close below lateral line, above and

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close behind last anteroanal; $\frac{1}{2}$
wide set precaudals, lower close
above front lower rudimentary
caudal rays, upper rather close
below end of lateral line.

D. 13, inserted midway between
snout tip and caudal base, well
behind ventral origin; adipose
fin $3\frac{1}{5}$ in head; A. 19, origin
below middle of dorsal base;
caudal emarginate; pectoral $2\frac{2}{5}$ in
head; ventral 2.

Length 62 mm.

(Norman.)

New Zealand Seas.

3700

Myctophum benoisti (Cocco)

Scopelus benoisti Cocco, Novi Ann.
Sci. Nat. Bologna, vol. 2, 1838, p.
172, pl. 6, fig. 4. Messina. — Bonaparte,
Iconogr. Fauna Italica, Pesc., pt. 2,
fasc. 27, 1840, pl., fig. 4.

Scopelus benoiti Bonaparte, Iconogr.
Fauna Italica, Pesc., pt. 2, fasc. 27,
no pagination (Sicily). — Günther, Cat.
Fishes Brit. Mus., vol. 5, 1864, p. 406
(Mediterranean; Messina). — Canestrini,
Fauna Italia, Pesci, 1874, p. 123
(Sicily, Nice). — Lütken, Kon. Dansk.
Vidensk. Selsk. Skrift. Kjöbenhavn,
ser. 6, vol. 7, 1892, p. 256, fig. 14 (N. 34°

Myctophum asperum Richardson

Myctophum asperum Richardson, Ichth.

Voy. Erebus and Terror, 1844-48, p. 41, pl.
27, figs. 13-15. Locality unknown.

Parr, Bull. Bingham Oceanogr. Collection,
vol. 3, art. 3, December 1928, p. 63 (note).

Myctophum (Myctophum) asperum Brauer,

Deutsch. Tiefsee Exped. Valdivia, vol. 5,

Tiefsee-Fische, 1906, p. 197, text fig. 115

(~~aspidichthys~~ Steindachner's specimen).

Scopelus asper Valenciennes, Hist. nat. Poiss.,

vol. 22, 184, p. 454 (). —

Günther, Cat. Fishes Brit. Mus., vol. 5,

1864, p. 411 (type; Gulf of Guinea; New
Ireland given as locality).

3701

40' W. 24° 20'; N. 41° W. 34'). — Carus,
Prodr. Fauna Medit., vol. 2, 1893,
p. 564 (compiled). — Asorio, Journ.
Math. Sci. Acad. Lisboa, ser. 2, vol. 3,
Aug. 1893, p. 140 (St. Thomas, West Africa).
Myctophum benoiti Goode and Bean,
Oceanic Ichth., 1895, p. 74, pl. 22, fig.
83 (Messina). — Brauer, Zool. Anzeiger,
vol. 28, Nr. 10, Dec. 20, 1904, p. 388
(diagnosis in key). — Regan, Fishes
Brit. Antarctic "Terra Nova" Exped.,
Nat. Hist. Rep. Zool., vol. 1, No. 4, 1916,
p. 139, pl. 6, figs. 1-2 (S. 35° 29' W. 50°

26', 2 meters). — Taaning, Rep. Danish
Oceanogr. Exped. Medit., no. 5, vol. 2,
A. 7, 1918, p. 45, figs. 15-16 (Mediterranean,
Messina, Sea of Marmora). — Parr,
Bull. Bingham Oceanogr. Collection,
vol. 3, art. 3, Dec. 1928, p. 66 (compiled).
— Taaning, Vidensk. Dansk. Naturh.
Foren., Kjöbenhavn, vol. 86, 1928, p. 57
(diagnosis in key).

Myctophum (Myctophum) benoiti Brauer,
Deutsch. Tiefsee Exped. Valdivia, vol. 15,
Tiefsee-Fische, 1906, p. 183, text fig. 95
(N. 31° 59' 3" W. 15° 5', Madeira; N. 24° 43'

4" W. $17^{\circ}1'3''$, south of Canaries; N.
 $22^{\circ}57'3''$ W. $18^{\circ}33'4''$; ~~Scopelus~~
~~Scopelus~~ S. $3^{\circ}55''$ E. $7^{\circ}48'5''$, Gulf of
Guinea). — Jugmayer, Rés. Camp. Sci.
Monaco, vol. 35, 1911, p. 25 (N. $33^{\circ}3'$ W.
 $41^{\circ}8'$, 3000 meters; N. $36^{\circ}51'30''$ W. $1^{\circ}30'$,
1300 meters). — Murray and Hjort,
The Depths of the Ocean, 1912, p. 613
(off Morocco).

Scopelus humboldti (not Risso) Moreau,
Poiss. France, vol. 3, 1881, p. 505
(compiled).

Myctophum benoisti (Cocco)

Scopelus benoisti Cocco, nuovi Ann. Sci.

Nat. Bologna, vol. 2, 1838, p. 172, pl. 6,
fig. 4. Messina.

Scopelus benoiti Günther, Cat. Fishes

Brit. Mus., vol. 5, 1864, p. 406 (Mediterranean,
Messina). — Lütken, Kon. Dansk. Vidensk.

Selsk. Skrift. Kjöbenhavn, ser. 6, vol. 7,

1892, p. 256, fig. 14 (off Azores). — Osorio,
Jorn. Sci. Acad. Lisboa, ser. 2, vol. 3, Aug. 1893, p. 140 (St. Thomas,
West Africa).
Myctophum benoiti Goode and Bean,

Oceanic Ichth., 1895, p. 74, pl. 22, fig. 83

(Messina). — Regan, Fishes Brit. Antarctic

"Terra Nova" Exped., Nat. Hist. Rep. Zool., vol. 1,
no. 4,

1916, p. 139, pl. 6, figs. 1-2 (35° 29' S., 50° 26' W., in
2 meters).

— Parr, Bull. Bingham Oceanogr. Collection,

3704

Depth 3 to $4\frac{2}{5}$; head 3 to $3\frac{1}{4}$,
width $2\frac{1}{3}$ to $2\frac{2}{5}$. Snout $4\frac{2}{3}$ to $5\frac{1}{4}$
in head from snout tip; eye $2\frac{1}{5}$ to $2\frac{3}{4}$,
twice snout, nearly twice interorbital;
maxillary reaches little beyond eye
though not to little inclined hind
preopercle edge, expansion $2\frac{1}{5}$ to $2\frac{3}{4}$
in eye, length $1\frac{2}{5}$ to $1\frac{1}{2}$ in head from
snout tip; interorbital $4\frac{1}{4}$ to 5, low,
eyes nearly or quite impinging on upper
profile of head. Gill rakers 5 + 17,
lanceolate, length $\frac{3}{4}$ of eye, nearly
twice gill filaments.

Scales 38 or 39 in lateral line; 4
above, 4 below, 12 or 13 predorsal. Scales

very caducous, mostly fallen.

Two small antorbital photophores, upper well above level of upper pupil edge and lower well below lower pupil edge; small postorbital at upper hind eye edge, not evident in most my examples; 2 operculars, upper little larger and in line with lower eye edge and lower subpectoral; 3 veiled branchiostegals, equidistant or median nearer rictus; 5 pectorals, second interspace longest and third shortest; 1 suprapectoral, above pectoral fin origin and midway between same and lateral line or

3706

little behind lower subpectoral; 2
subpectorals, first or lower below
upper or slightly posterior to second
pectoral photophore, upper close before
and below lowest pectoral ray bases;
4 ventrals, equidistant; 1 supraventral,
level with upper opercular and above
ventral fin origin; 5 to 7 + 5 to 7 anals,
last 3 or 4 posteroanals behind ventral
fin base; 3 supraanals, first or
lowest level with lower or front
subpectoral and slightly before third
ventral, second slightly higher or
about level with upper or second
subpectoral and opposite anal fin

origin, uppermost or third on lateral line little before first anteroanal; 2 posterolaterals, first little nearer and posterior to last anteroanal, upper on lateral line; 2 precaudals, close together, posterior little higher. Male with supracaudal luminous plate, female with 2 to 4 smaller infracaudal luminous scales.

D. IV, 8, I, first branched ray $1\frac{2}{3}$ to 2 in total head length; adipose fin $2\frac{7}{8}$ to $3\frac{1}{3}$; A. III, 14, I or III, 15, I, first branched ray $1\frac{3}{5}$ to 2; caudal $1\frac{1}{10}$?, well forked; least depth of caudal peduncle 3 to $3\frac{1}{10}$; pectoral $1\frac{1}{5}$ to $1\frac{1}{4}$;

reaches anal origin; ventral 2
to $2\frac{1}{4}$.

Brown, with silvery reflections on
scales. Fins pale.

Atlantic and Antarctic Oceans.

Tanning gives still further variation
for the anal photophores, as $4 + 8$.

His figures show the metamorphosis
of the larva to the adult. The vertebral
were found to be 35 to 37 in the adults,
of which 15 lumbar and 21 caudal.

{ 28433 U.S.N.M. Italy. Italian
Commission. Gravid female. Length 65 mm.

10163 U.S.N.M. Italy. Bonaparte
Collection. Academy of Natural Sciences of
Philadelphia. Length 52 to 54 mm.
3 examples.

40063 U.S.N.M. Italy.

3709

Florence Museum. Length 24 to 53 mm.

9 examples.

49355 U.S.N.M. Messina.

Mr. Bellotti. Length 44 to 55 mm.

5 examples.

Myctophum reinhardtii (Lütken)

Scopelus reinhardtii Lütken, Kon. Danske.

Vidensk. Selsk. Skrift. Kjöbenhavn,
ser. 6, vol. 7, no. 6, 1892, p. 257, fig. 16.

h. Lat. $34^{\circ}25'$ W. Long. $18^{\circ}10'$, Atlantic

[designated type by Gilbert].

Myctophum reinhardtii Goode and Bean,
Oceanic Ichth., 1895, p. 74 (compiled). —

Waite, Records Australian Mus., vol. 5, pt. 3,
1904, p. 154 (Lord Howe Island).

Myctophum reinhardtii Gilbert, Mem. Mus.
Comp. Zool., vol. 26, no. 6, 1908, p. 219 (N. Lat.
 $1^{\circ}45'$ W. Long. $137^{\circ}36'$); Mem. Carnegie Mus.,
vol. 6, no. 2, August 1913, p. 80 (off Japan). —
Jordan and Jordan, Mem. Carnegie Mus.,

eye center to lipid eye edge or slightly beyond.

c.¹ mandible protruding.

d.¹ Eye $3\frac{2}{5}$ to $3\frac{1}{2}$ in head from snout tip; D. 16 or 17; A. 17 to 19. nudus
max. to p. edge to hind eye edge

d.² Eye $3\frac{3}{4}$ in head from snout tip; D. 18 or 19; A. 17. watasei
max. of hind eye edge
a. Eye $3\frac{1}{2}$ to 4 in h. f. a. t. D. 18-20 a. 13-15
max. of hind eye edge or beyond squamulatus

c.² mandible included in upper jaw; eye $3\frac{2}{3}$ in head; D. 19 to 21; A. 18 or 19. lividus

Routing

b.² Anal origin opposite dorsal origin; maxillary reaches $\frac{1}{2}$ in eye. güntheri

a.²

vol. 10, no. 1, Dec. 1922, p. 11 (reference).

— Taaning, Vidensk. Medd. Dansk
Naturh. Foren. København, vol. 86,
1928, p. 57 (diagnosis in key). — Parr,
Bull. Bingham Oceanogr. Collection,
vol. 3, art. 3, Dec. 1928, p. 66 (compiled). —
Fowler, Mem. Bishop Mus., vol. 10, 1928,
p. 70 (compiled). — Parr, Proc. U.S.
Nat. Mus., vol. 76, 1929, p. 12 (type
of Myctophium braueri).

Myctophum (Myctophum) reinhardtii
Brauer, Deutsch. Tiefsee Exped. Valdivia,
 vol. 15, Tiefsee Fische, 1906, p. 185,
 text figs. 96 to 101 (N. $24^{\circ}43'4''$ W. $17^{\circ}1'3''$,
 south of Canaries; N. $8^{\circ}58'$ W. $16^{\circ}27'9''$,
 Sierra Leone; N. $1^{\circ}27'8''$ W. $10^{\circ}16'5''$; N. 0°
 $26'3''$ W. $6^{\circ}32'$, Gulf of Guinea; N. $1^{\circ}51'$
 E. $0^{\circ}31'2''$; N. $2^{\circ}36'5''$ E. $3^{\circ}27'5''$; S. 3°
 $55'$ E. $7^{\circ}48'5''$; S. $5^{\circ}6'2''$ E. $9^{\circ}58'6''$; S. 11°
 $28'$ E. $10^{\circ}24'$, off south west Africa; S.
 $31^{\circ}21'1''$ E. $9^{\circ}45'9''$; N. $7^{\circ}43'2''$ E. $88^{\circ}44'9''$,
 Bay of Bengal; N. $4^{\circ}56'$ E. $78^{\circ}15'3''$, between
 Ceylon and Chagos; S. $4^{\circ}5'8''$ E. $73^{\circ}24'8''$;
 S. $6^{\circ}19'3''$ E. $73^{\circ}18'9''$; N. $4^{\circ}55'8''$ E. $70^{\circ}1'9''$,
 between Chagos and Seychelles; S.
 $2^{\circ}38'7''$ E. $65^{\circ}59'2''$; S. $3^{\circ}24'6''$ E. $58^{\circ}38'$
 $1''$; S. $3^{\circ}26'2''$ E. $58^{\circ}34'2''$; S. $4^{\circ}45'$ E. $48^{\circ}58'$
 $6''$, between Seychelles and Zanzibar;
 N. $9^{\circ}6'1''$ E. $53^{\circ}41'2''$, south of Sokotra;
 N. $13^{\circ}2'8''$ E. $46^{\circ}41'6''$, Gulf of Aden; S.
 30° W. 84° , off western Chili; S. 31° W. 74°).

Myctophum benoiti reinhardtii Brauer,
Zool. Anzeiger, vol. 28, Nr. 10, Dec. 20,
1904, p. 388 (diagnosis in key). —

Weber, Siboga Exped., vol. 57, Fische,
1913, p. 86 (Molucca Passage; Halmahera
Sea; Banda Sea; 1000 to 1500 meters).

Myctophum benoiti var. reinhardtii
Weber and Beaufort, Fishes Indo
Austral. Archipelago, vol. 2, 1913, p.
155, fig. 60 (photophores) (Weber's
materials).

~~→ Parv, Bull. Bingham Oceanogr. Collection,
Vol. 3, art. 3, Dec. 1928, p. 67 (Atlantic materials).~~

~~Myctophum (Myctophum) laternatum Brauer,
Deutsch. Tiefsee Exped. Valdivia, vol. 5,
Tiefsee-Fische, 1906, p. 178, text figs. 89-
91 (Atlantic materials; between New
Amsterdam and Sumatra; Bay of Bengal;
between Ceylon and Chagos Archipelago; between
Chagos Archipelago and Seychelles; between
Seychelles and Zanzibar; north east coast
of Africa to Sokotra and Gulf of Aden).~~

~~Myctophum laternatum atlanticum Taaning,
Vidensk. Medd. Dansk. Naturh. Foren.
Kjöbenhavn, vol. 86, 1928,~~

Myctophum (Myctophum) benoiti
reinhardtii Pappenheim, Deutsch.

Südpolar Exped., vol. 15, Zool. 7, 1914,

p. 193 (S. $23^{\circ}33'$ W. $20^{\circ}51'$, 3000 meters;
 S.

S. $30^{\circ}21'$ W. $14^{\circ}2'$, 10 meters; N. $17^{\circ}18'$

W. $24^{\circ}58'$, 3000 meters; N. $0^{\circ}46'$ W. $18^{\circ}59'$,

3000 meters; N. $5^{\circ}27'$ W. $21^{\circ}41'$, 800 to 1500

meters; N. $17^{\circ}28'$ W. $29^{\circ}42'$, 3000 meters;

S. $8^{\circ}43'$ W. $11^{\circ}55'$, 3000 meters).

Myctophum (Myctophum) benoiti var.
reinhardtii Barnhard, Ann. South African
 Mus., vol. 21, pt. 1, June 1925, p. 242
 (off Cape Point and south of Agulhas
 Bank, 200 fathoms).

Myctophum atratum Garman, Mem.
 Mus. Comp. Zool., vol. 24, 1899, p. 268.
 N. $25^{\circ}26'15''$ W. $109^{\circ}48'$, 1218 fathoms,
 west coast Mexico.

vol. 10, No. 1, Dec. 1922, p. 11 (reference). —

Parr, Bull. Bingham Oceanogr. Collection,
vol. 3, art. 3, Dec. 1928, p. 66 (compiled). —

Fowler, Mem. Bishop Mus., vol. 10, 1928,

p. 70 (compiled). — Parr, Proc. U. S. Nat. Mus.,

vol. 76, 1929, p. 12 (type of Myctophum lorangii).

Myctophum (Myctophum) reinhardtii

Brauer, Deutsch. Tiefsee Exped. Valdivia,

vol. 5, Tiefsee-Fische, 1906, p. 185, text figs.

96-101 (off south-west Africa; Bay of

Bengal; between Ceylon and Chagos

Archipelago; between Chagos Archipelago

and Seychelles; between Seychelles and

Zanzibar; north east coast of Africa and

Sokotra; Gulf of Aden).

Myctophum braueri (not Lönnberg 1905)
Gilbert, Bull. U. S. Fish Comm., Vol. ,
 pt. 2, 1903 (1905), p. .

Myctophum luetkeni (not Brauer) Gilbert,
 Bull. U. S. F. Com., vol. 23, pt. 2, 1903 (1905),
 pl. 70, fig. 1 (legend erroneous).

Depth $4\frac{1}{4}$ to $4\frac{1}{2}$; head $3\frac{1}{3}$ to $3\frac{1}{2}$, width
 2 to $2\frac{1}{4}$. Snout 5 to $5\frac{3}{4}$ in head from
 snout tip; eye $2\frac{2}{5}$ to $2\frac{2}{3}$, greater than
 snout or interorbital; maxillary reaches
 little or but slightly behind eye, but
 not quite to vertical hind preopercle edge,
 expansion $2\frac{1}{4}$ to $2\frac{1}{2}$ in eye, length $1\frac{1}{2}$ to
 $1\frac{3}{5}$ in head from snout tip; interorbital

4 examples. Varadero Bay,
Mindoro. July 22, 1908. By
electric light 11.30^{P.M.} to 12.30 A.M.

Length 74 to 93 mm. 4 examples.

D. 5190. Pescador Island, S. 9° E.,
10.70 miles ($10^{\circ} 8' 15''$ N., $123^{\circ} 16' 45''$
E.), Tanon Strait east coast of Negros,
in 295 fathoms. April 1, 1908.

Length 12 to 32 mm. 32 examples.

D. 5211. Panalangan Point, Talajit
Island, N. 33° E., 5.25 miles ($11^{\circ} 51'$
 $35''$ N., $124^{\circ} 14'$ E.), east of Masbate
Island, in 155 fathoms. April 17,
1908. Length 38 to 46 mm. 3 examples.

$3\frac{1}{3}$ to $3\frac{2}{3}$, concave to nearly level.
Gill rakers $6 + 14$, lanceolate, $\frac{1}{2}$ of eye;
gill filaments $\frac{1}{3}$ of eye.

Scales 38 or 39 in lateral line, not
enlarged; 3 above, 4 or 5 below, 12 predorsal
to occiput. Caudal base scaly. Scales
very caducous, most all fallen. Scales
with 7 basal radiating striae; circuli
rather fine, more or less complete.

Small lower antorbital photophore,
sometimes also an upper well superior;
2 operculars, upper larger and in line
inclined from lower eye edge to lower
subpectoral; 3 equidistant veiled
branchiostegals; 5 pectorals, with third

$1\frac{1}{2}$ to $1\frac{3}{5}$ in head from snout tip.

interspace shortest and first and second subequally longest; 1 suprapectoral, before pectoral fin origin and midway ^{same and} between lateral line; 2 subpectorals, first or lower slightly before suprapectoral or over second pectoral, upper close before lowest pectoral ray bases; 4 equidistant ventrals; 1 supraventral over ventral origin and nearly midway between latter and lateral line; 6 + 7 or 8 anals, at least half of posteroanals over anal fin base; 3 supraanals, first lowest or distinctly lower than supraventral or just above lowest third of space below lateral line and behind second ventral, second over

or little behind last anteroanal and
 ventral and level with supraventral and
 third on lateral line over or little before
 first anteroanal; 2 posterolaterals, lower
 before, over or little behind last
 near lower edge of tail and upper posterior
 on or below lateral line at caudal base.

Male with 4 to 6 supracaudal luminous
 scales, female with 1 to 3 infracaudal.

D. IV, 8, I or III, 9, I, first branched ray
 $1\frac{1}{5}$ to $1\frac{1}{2}$ in total head length; adipose
 fin $3\frac{1}{8}$ to $3\frac{4}{5}$; A. III, 16, I to III, 19, I, first
 branched ray $1\frac{4}{5}$ to 2; caudal $1\frac{1}{3}$?, well
 emarginate; least depth of caudal peduncle
 $3\frac{1}{2}$ to $3\frac{7}{8}$; pectoral 1 to $1\frac{1}{6}$; ventral 2 to $2\frac{1}{3}$.

Brownish to dusky where denuded
 of scales. Body about fin bases deep

or little behind last anteroanal and
 upper on lateral line over break in
 equal series; 2 wide set precaudals, lower
 near lower edge of tail and upper posterior
 on or below lateral line at caudal base.
 Male with 4 to 6 supracaudal luminous
 scales, female with 1 to 3 infracaudal.

D. IV, 8, I or III, 9, I, first branched ray
 $1\frac{1}{5}$ to $1\frac{1}{2}$ in total head length; adipose
 fin $3\frac{1}{8}$ to $3\frac{4}{5}$; A. III, 16, I to III, 19, I, first
 branched ray $1\frac{4}{5}$ to 2; caudal $1\frac{1}{3}$?, well
 emarginate; least depth of caudal peduncle
 $3\frac{1}{2}$ to $3\frac{7}{8}$; pectoral 1 to $1\frac{1}{6}$; ventral 2 to $2\frac{1}{3}$.

Brownish to dusky where denuded
 of scales. Body about fin bases deep

near lower
302 (near of China). — Waite, Records
Australian Mus., vol. 1, no. 1, April 25, 1907,
on Lake

brown to blackish. Sides of head and adherent scales silvery, with iridescent reflections. Fins all pale brown to whitish. Iris silvery white, gray in preserved specimens.

Atlantic, Indian and Pacific Oceans. Compared with Brauer's figure 90 most of my specimens show the suprapectoral photophore, the second or median supraanal and first or lower posterolateral at the same level. Brauer shows the first 2 anals and first posterolateral level.

Although Parr gives "East Indian waters" in his distribution for Myctophum benoisti (Cocco), evidently from Weber and

Beaufort's 1913 account, their material is clearly Myctophum reinhardtii (Lütken), with which they identify it. This is evident from Parr's 'key' in which the chief character of distinction is given as "Last Prc. [precaudal] about midway between lateral line and ventral outline of tail or lower" in Myctophum benoisti. Weber and Beaufort give for their M. benoisti var. reinhardtii as "distant from the latter [group] [anals] but at the lower profile is the anterior Prc., the posterior high up in the lateral line."

D. 4640.

3722

Length 45 to 60 mm. 8 examples.

D. 5195. Capitanillo Island Light, N. 11.75 miles ($N. 10^{\circ}47'E. 124^{\circ}6'30''$), off northern Cebu.

April 3, 1908. Length 16 to 26 mm. 92 examples.

D. 5196. Capitanillo Light, N. $5^{\circ}30'W.$, 14.30 miles ($N. 10^{\circ}44'30''E. 124^{\circ}7'30''$), off northern

Cebu. April 3, 1908. Length 18 to 24 mm. 2 examples.

D. 5176. Escarceo Light, S. $57^{\circ}E.$, 7 miles ($N. 13^{\circ}35'15''E. 120^{\circ}53'20''$), Verde Island

Passage, in 260 fathoms. March 24, 1908.

Length 19 to 22 mm. 3 examples.

D. 5437. Hermana Mayor Light, N. $69^{\circ}E.$, 4.9 miles ($N. 15^{\circ}45'54''E. 119^{\circ}42'45''$), west coast of Luzon. May 8, 1909. Length 18 mm.

3723

D. 5258. Juraojurao Island (S.), S.
75°W., 16.25 miles (N. 10°27'45"E. 122°12'30"),
off southern Panay, June 2, 1908. Length
22 to 24 mm. 6 examples.

D. 5653. Lamulu, S. 40°E., 18 miles
(S. 4°27'36"E. 121°16'36"), Gulf of Boni, Celebes.
December 17, 1909. Length 14 to 25 mm. 14 examples.

D. 5232. Limasawa Island (S.), S. 69°E.,
20.60 miles (N. 10°00'45"E. 124°44'06"), between
Bohol and Leyte. May 7, 1908. Length 16 mm.

D. 5186. Lusaran Light, N. 20°E., 37.80
miles (N. 9°53'30"E. 122°15'30"), between
Panay and Negros. March 30, 1908. Length 20 mm.

D. 5669. Inamujan Island (E.), S. 14°E.,
18.50 miles (S. 2°19'30"E. 118°50'00"), Macassar
Strait. December 29, 1909. Length 20 mm.

3724

D. 5125. Hogas Island (W.), S. 11° E., 24 miles (N. $10^{\circ}48'30''$ E. $121^{\circ}48'30''$), Sulu Sea vicinity southern Panay. In 411 fathoms.

February 3, 1908. Length 14 to 25 mm. 3 examples.

D. 5180. Romblon Light, N. $6^{\circ}30'$ E., 7.10 miles (N. $12^{\circ}28'30''$ E. $122^{\circ}15'$), vicinity of Romblon. March 26, 1908. Length 45 to 60 mm. 8 examples.

D. 5227. Point Origon, S. 44° E., 18.30 miles (N. $12^{\circ}53'45''$ E. $121^{\circ}52'30''$), east of Mindoro. In 322 fathoms. May 5, 1908. Length 21 to 50 mm. 4 examples.

D. 5228. Romblon Light, N. 3° E., 6.25 miles (N. $12^{\circ}29'30''$ E. $122^{\circ}15'45''$), south of Romblon. May 5, 1908. Length 22 to 34 mm. 21 examples.

D. 5120. Sombbrero Island, S. $79^{\circ}30'E$,
19.2 miles (N. $13^{\circ}45'30''E$, $120^{\circ}30'15''$),
Balayan Bay and Verde Island Passage.
In 393 fathoms. January 21, 1908. Length

14 mm.

51526 U.S.N.M.

Albatross Collection (4145). Length 47 mm.

51527 U.S.N.M.

Albatross Collection (3980). Length 57 mm.
Type of Myctophum braueri.

51525 U.S.N.M.

Albatross Collection (3878). Length 22 to 50 mm.
3 examples.

51537 U.S.N.M.

Albatross Collection (3927). Length 22 to 30 mm.
5 examples.

74659 U.S.N.M.

Albatross Collection (4954). Length 22 mm.

74660 U.S.N.M.

Albatross Collection (4955). Length 26 mm.

75792 U.S.N.M.

Albatross Collection.
5 examples.

Length 14 to 16 mm.

75793 U.S.N.M.

Albatross Collection (3878). Length 16 mm.

1 example. A.N.S.P. S. 20° W. 75°

Dr. Benjamin Sharp. Length 31 mm.

Myctophum macrochir (Günther)

Scopelus macrochir Günther, Cat. Fishes
Brit. Mus., vol. 5, 1864, p. 408. No
locality (old collection; Haslar collection).

Myctophum macrochir Parr, Bull.
Taaning, Vidensk. Medd. Dansk Naturh. Foren.
København, vol. 86, 1928, p. 57 (diagnosis in key). —
Dec. 1928, p. (01) 17, fig. 10 (part of 3°

W. 71° to 77°; off west Cocon Island); Proc.
U. S. Nat. Mus., vol. 76, 1929, p. 25 (note).

[Lampanyctus alatus (not Goode and
Bear) ^{Bingham} Breder, Bull. Oceanogr. Collection,
vol. 1, art. 1, 1927, p. 17 (part).
— Horman, Discovery Rep., vol. 2, 1930, p. 326
(S. 43°20' W. 46°2', 2000 meters; S. 00°46' E. 5°49'
15"; 850 to 950 meters; S. 2°49'30" W. 9°25'30",
800 to 1000 meters; N. 3°4'45" W. 16°52', 132
meters; N. 12°8' W. 20°53'30", 200 to 300 meters;
N. 6°55' W. 15°54', 800 meters).

Myctophum macrochir (Günther)

Scopelus macrochir Günther, Cat. Fishes
Brit. Mus., vol. 5, 1864, p. 408. No
locality (old collection; Haslar collection).

Myctophum macrochir Parr, Bull.

1928, p. (67) 74, fig. 10 (N. 21° to 23°
W. 71° to 77° ; off west Coco Island); Proc.
U. S. Nat. Mus., vol. 76, 1929, p. 25 (note).

Lampanyctus alatus (not Goode and

Bean) Breder, Bull. ^{Bingham} Oceanogr. Collection,

vol. 1, art. 1, 1927, p. 17 (part).

Horman, Discovery Rep., vol. 2, 1930, p. 326
(S. $43^{\circ}20'$ W. $46^{\circ}2'$, 2000 meters; S. $00^{\circ}46'$ E. $5^{\circ}49'$
 $15''$; 850 to 950 meters; S. $2^{\circ}49'30''$ W. $9^{\circ}25'30''$,
800 to 1000 meters; N. $3^{\circ}4'45''$ W. $16^{\circ}52'$, 132
meters; N. $12^{\circ}8'$ W. $20^{\circ}53'30''$, 200 to 300 meters;
N. $6^{\circ}55'$ W. $15^{\circ}54'$, 800 meters).

Zeitschrift für Naturwissenschaft
Anzeiger, vol. 28, nr. 10, Dec. 20, 1904, p.
(diagnosis in key).

Myctophum
Bingham Dec.
Dec. 1904

3728

Depth 4; head $3\frac{1}{4}$. Snout 6 in head from snout tip; eye $2\frac{4}{5}$, greatly exceeds snout; maxillary extends barely $\frac{1}{4}$ eye diameter behind eye, apparently ^{nearly vertical} behind preopercle edge, length $1\frac{3}{5}$ in head from snout tip; interorbital low, eye impinging on upper profile.

Scales in lateral line 31, somewhat enlarged. Apparently a single opercular photophore level with upper subpectoral; 3 branchiostegals; 5 pectorals, second interspace longest, first but little shorter; 1 suprapectoral, over second pectoral about level with eye center

well below lateral line; 2 subpectorals,
first or anterior much below upper
though nearly equidistant from
second pectoral, also directly over
second pectoral; 4 ventrals, equidistant;
1 supraventral, midway between
ventral base and lateral line;
anals 5 or 6 + 4 or 5, last 2 postero-
anals behind anal fin base; 3
supraanals, lowest over interspace
between third and fourth ventral,
median little higher though not
quite high as upper subpectoral

3730

but before uppermost which
close below lateral line and
little before first anteroanal; 2
posterolaterals, first or lower
directly above last anteroanal; 2
precaudals, first close above lower
rudimentary rays and second
close below end of lateral line.

Supracaudal luminous plates 4.

D. 13, fin height $1\frac{7}{8}$ in total
head length; A. 21, begins opposite
last fourth of dorsal base, fin
height $2\frac{1}{10}$; caudal $1\frac{1}{5}$; least

depth of caudal peduncle 3,
pectoral 1, reaches beyond anal
origin; ventral $2\frac{3}{4}$.

Length 63 mm. (Günther, Parr.)

Atlantic Ocean.

Myctophum hygonii (Lütken)

Scopelus hygonii Lütken, Kon. dansk. Vid.

Selsk. Skrift. Kjöbenhavn, ser. 6, vol. 7,

N. 38° W. $22^{\circ}20'$; S. $35^{\circ}12'$ E. 26° ; N. $23^{\circ}30'$

1892, p. 256, fig. 15. ~~Agorea; off Cape of~~

E. 81° ; S. $24^{\circ}30'$ E. $75^{\circ}50'$; S. $39^{\circ}54'$ E. $41^{\circ}30'$.

~~Good Hope; north west of St. Paul's Rocks;~~

~~north of Madagascar.~~

Myctophum hygonii Goode and Bean,

Oceanic Ichth., 1895, p. 75 (compiled). —

[Waite, Records Australian Mus., vol. 5,
pt. 3, 1904, p. 153 (Lord Howe Island).

(Jordan and Evermann, Bull. U. S. Nat. Mus.,
no. 47, pt. 1, 1896, p. 573 (compiled).

Myctophum (Myctophum) subasperum Brauer,
Deutsch. Tiefsee Exped. Valdivia, vol. 5,
Tiefsee - Fische, 1906, p. 175, text fig. 87
(type of Myctophum megalops).

Myctophum subasperum Parr, Bull. Bingham
Oceanogr. Collection, vol. 3, art. 3, Dec. 1928,
p. 58 (compiled). — Horman, Discovery

Myctophum hygoni Jaaning, Rep.
Danish Oceanogr. Exped., No. 5, vol. 2,
A. 7, 1918, p. 51, figs. 17-18 (Mediterranean;
Atlantic); Vidensk. medd. Dansk
Naturh. Foren. København, vol. 86, 1928,
p. 57 (diagnosis in key). — Parr, Bull.
Bingham Oceanogr. Collection, vol. 3, art. 3,
Dec. 1928, p. (67) 76 (N. 23° to 32° W. 64° to 77° ,
4000 to 8000 feet); Proc. U. S. Nat. Mus.,
vol. 76, ^{art. 10,} 1929, p. 12 (type of Myctophum
remiger).

Myctophum benoiti hygomi Brauer,
Zool. Anzeiger, vol. 28, Nr. 10, Dec. 20,
1904, p. 389 (diagnosis in key).

Myctophum (Myctophum) benoiti hygomi
Brauer, Deutsch. Tiefsee Exped. Valdivia,
vol. 15, Tiefsee Fische, 1906, p. 187, text fig.
102 (Lütken's example). — Murray
and Hjort, The Depths of the Ocean,
1912, p. 613 (off Morocco; west of
Canaries).

Myxotophum remiger Goode and Bean,

Oceanic Ichth., 1895, p. 74, pl. 22, fig. 84.

West Atlantic and Gulf Stream, to 1641
fathoms.

Depth $3\frac{4}{5}$ to 4; head 3 to $3\frac{1}{2}$, width
 $1\frac{4}{5}$ to $1\frac{7}{8}$. Snout $4\frac{4}{5}$ to $5\frac{1}{2}$ in head from
snout tip; eye $2\frac{1}{3}$ to $2\frac{1}{2}$, greater than
snout or interorbital; maxillary reaches
little beyond eye but not to nearly vertical
hind preopercle edge, expansion 2 to $2\frac{1}{2}$ in
eye, length $1\frac{2}{5}$ to $1\frac{1}{2}$ in head from snout

3736

tip; interorbital 4 to $4\frac{1}{8}$, level. Gill
rakers $5 + 17$ or 18 , lanceolate, $1\frac{4}{5}$ in
eye, nearly twice gill filaments.

Scales 37 to 39 in lateral line; 3
above, 3 or 4 below, 15 or 16 predorsal.

Small pointed scale in ventral fin axil.

Scales with 3 basal radiating striae;
circuli rather fine, obsolete apically.

Small upper and lower antorbital
photophore; 2 operculars, upper larger and
level with lower eye edge; 3 equidistant
veiled branchiostegals; 5 pectorals, third
interspace shortest; 1 suprapectoral little
before and close above pectoral origin,
over lower subpectoral; 2 subpectorals,

first or lower much nearer upper than
first pectoral spot or nearly over
second pectoral spot, upper close before
bases of lowest pectoral fin rays; 4
ventrals, equidistant; 1 supraventral,
on lateral line opposite ventral base;
6 or 7 + 6 or 7 anals, most posteroanals
posteriorly behind ventral fin base; 3
supraanals, anterior lowest or over
interspace between first and second ventrals,
second about midway and little behind
last ventral and lateral line, uppermost
on lateral line opposite first anteroanal;
2 mediolaterals, anterior over or behind
penultimate anterolateral and posterior

on or close below lateral line little before first posteroanal; 2 precaudals, lower close to lower edge of tail and upper behind or nearly at lateral line little posterior. Small infracaudal luminous scale.

D. III, 9, I or III, 10, I, first branched ray $1\frac{1}{3}$ to $1\frac{2}{5}$ in total head length; adipose fin $2\frac{7}{8}$ to 4; A. III, 16, I to IV, 18, I, first branched ray $1\frac{1}{2}$ to $1\frac{3}{5}$; caudal $1\frac{1}{8}$ to $1\frac{1}{3}$, well forked; least depth of caudal peduncle $3\frac{1}{8}$ to 4; pectoral $1\frac{1}{4}$ to $1\frac{2}{5}$; ventral 2 to $2\frac{1}{5}$.

Brown, nearly uniform where scales have fallen. Scales, sides of head and

iris bright silvery white. Fins all
pale brownish. 3739

Atlantic, Indian and Pacific
Oceans.

28942 U.S.N.M. N.39° W.69° 3740

Albatross Collection . Length 46 to 65 mm.
3 examples.

33842 U.S.N.M. N.41° W.65°

Albatross Collection 2073. Length 55 mm.

37503 U.S.N.M. Cuba. Prof. F. Poey.

Length 70 to 73 mm. 2 examples. Poorly preserved.

38171 U.S.N.M. N.36° W.73°

Albatross Collection. Length 59 mm.

38193 U.S.N.M. N.36°35' W.74°03'30"

Albatross Collection 2727. Length 58 to 74 mm.
5 examples.

43786 U.S.N.M. N.39° W.70°

Albatross Collection 2549. Length 41 to 64 mm.
10 examples.

43792 U.S.N.M. N. 40°

W. 64°

3741

Albatross Collection

. Length 54 to 70

mm. Types of Myctophum remiger.
9 examples.

43793 U.S.N.M. N. 37°

W. 73°

Albatross Collection 2742. Length 48 to 65 mm.
8 examples.

43794 U.S.N.M. N. 36°

W. 74°

Albatross Collection

. Length 50 to 64 mm.

Paratypes of Myctophum remiger. 7 examples.

43795 U.S.N.M.

Albatross Collection 2719. Length 46 to 62 mm.
4 examples.

72467 U.S.N.M. N. 39° 33' W. 70° 50'

Albatross Collection 2682. Length 56 to 68 mm.
5 examples.

72468 U.S.N.M. N. $32^{\circ}40'$ W. $76^{\circ}40'$

Albatross Collection . Length 64 mm.

and 5 to 8 more on latter; tubular scales 58 to 60 in lateral line to caudal base and 2 or 3 more on latter; 10 or 11 scales above lateral line, 30 to 33 below, 42 or 43 predorsal scales forward above nostrils, 14 or 15 rows across cheek to preopercle angle. Scales with 4 basal lobes; 10 or 12 apical denticles; circuli moderate.

D. IX or X, 11, I or 12, I, fifth spine $2\frac{2}{5}$ to $2\frac{3}{4}$ in total head length, fourth ray $1\frac{1}{8}$ to $1\frac{1}{2}$; A. III, 13, I, third spine $2\frac{1}{3}$ to $2\frac{3}{5}$, fourth ray $1\frac{1}{2}$ to $1\frac{4}{5}$; caudal $1\frac{1}{8}$ to $1\frac{1}{4}$, well emarginate; least depth of caudal peduncle 4 to $4\frac{1}{8}$; pectoral $1\frac{4}{5}$ to 2; ventral $1\frac{1}{8}$ to $1\frac{1}{5}$.

Light brown, pale to whitish on lower sides and below, sides also with silvery white tinge. Iris whitish

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Genus Lampanyctus Bonaparte

Lampanyctus Bonaparte, Ichnog. Fauna
Italia; pesc. 3, fasc. 27, 1840, description.

Type Serpe crocodilus Risso = hyetophus
bonapartii Cocco, monotypic.

? Macrostoma Risso, Hist. Nat. Eur. Mérid.,
vol. 3, 1826, p. 447. Type macrostoma
angustidens Risso, monotypic.

(Macrostomus Wied 1817 not involved.)

Notoscopelus Günther, Cat. Fishes Brit. Mus.,
vol. 5, 1864, pp. 405, 411. Type Lampanyctus

resplendens Richardson, designated by
Goode and Bean, Oceanic Ichth., 1895, p. 82.

Ceratoscopelus Günther, Cat. Fishes Brit.
Mus., vol. 5, 1864, p. (405) 412. Type

Scopelus maderensis Lowe, monotypic.
Hannobrachium Günther, Rep. Voy.

Challenger, vol. 22, 1887, p. 199. Type

Hannobrachium nigrum Günther, monotypic.

Stenobrachius Eigenmann and Eigenmann,

Proc. California Acad. Sci., ^{ser. 2,} vol. 3, 1890, p. 5.

Type Myctophum (Stenobrachius) leucopsarum

Eigenmann and Eigenmann, orthotypic.

Catablemella Eigenmann and Eigenmann, Proc.

California Acad. Sci., ser. 2, vol. 3, 1890, p.

24. Type Hannobrachium brachycheir

Eigenmann and Eigenmann, orthotypic.

Myctimaster Jordan, Proc. U. S. Nat. Mus.,

vol. 59, 1922, p. 645, fig. 2. Type Lampanyctus

jordani Gilbert, orthotypic.

Maxillary only slightly expanded posteriorly. Mouth cleft extends far behind hind eye edge. Antorbital luminous organs not prominently enlarged. Fourth pectoral photophore sometimes elevated. Subpectoral photophores 2, usually well inclined, often in vertical line, rarely form straight series with first pectoral photophore; lower subpectoral often posterior to upper. Suprapectoral photophore always dorsal to pectoral fin. Anal photophores always in 2 groups. Posterolateral photophores 2. All photophores without black dividing septa. Luminous scales

supracaudal and infracaudal,
also sometimes elsewhere on body.
Precaudal photophores separate or
contiguous with posteroanals, when
separate as 3 to 6 or usually 3 or 4.

The following are insufficiently
developed or described to be placed
among the accepted species:

Myctimaster reinhardtii Jordan 1922.

Founded on damaged specimens.

Lampanyctus reinhardtii Regan 1916,

Based on young.

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The following are all small and imperfectly preserved specimens which are unidentifiable other than as belonging to Lampanyctus.

D. 4765. West point Yunaska Island, S. 37° E., 43.5 miles (N. $53^{\circ}12'$ W. $171^{\circ}37'$), Alaska. In 1217 fathoms. May 29, 1906. Length 27 mm.

D. 4766. Koniugi Island, S. 22.5° W., 27 miles (N. $52^{\circ}38'$ W. $174^{\circ}49'$), Alaska. In 1766 fathoms. May 31, 1906. Length 30 mm.

D. 4785. N. $53^{\circ}20'$ E. $170^{\circ}33'$, North Pacific. In 1850 fathoms. June 12, 1906. Length 25 to 30 mm. 29 examples.

D. 5125. Lugas Island (W.), S. 11° E., 24 miles (N. $10^{\circ}48'$ E. $121^{\circ}48'30''$), Sulu Sea vicinity southern Panay. In 411 fathoms. February 3, 1908. Length 30 mm.

D. 5319. China Sea, vicinity of Formosa
(N. $21^{\circ}31'$ E. $117^{\circ}53'$). November 5, 1908.

Length 25 to 29 mm. 3 examples.

D. 5320. China Sea, vicinity of Formosa
(N. $20^{\circ}58'$ E. $120^{\circ}03'$). In 1804 fathoms.

November 6, 1908. Length 24 to 33 mm.
3 examples.

D. 5437. Hermana Mayor Light, N. 69°
E., 4.9 miles (N. $15^{\circ}45'54''$ E. $119^{\circ}42'45''$),
west coast of Luzon. May 8, 1909. Length
26 to 42 mm. 7 examples.

D. 5489. San Ricardo Point (Panaon
Island), N. 42° E., 6.6 miles (N. $9^{\circ}50'30''$
E. $125^{\circ}10'$), between Leyte and Mindanao.
July 31, 1909. Length 27 to 31 mm. 2 examples.

3749

D. 5497. Bantigui Island, N. 64° W.,
10 miles (N. $9^{\circ}07'15''$ E. $124^{\circ}59'30''$),
between Leyte and Mindanao. In 960 fathoms.
August 3, 1909. Length 25 to 29 mm. 3 examples.

89908 U.S.N.M. N. $32^{\circ}50'$ W. $64^{\circ}18'$.

Museum of Comparative Zoology, Cambridge,
Mass. Length 55 to 80 mm. 18 examples.

Very poorly preserved, as Lampadena
luminosa, which they are not.

Lampanyctus angustidens (Risso)

Scopelus angustidens Risso, Mem. Accad.
Sci. Torino, vol. 25, 1820, p. 267. Nicc.

— Günther, Cat. Fishes Brit. Mus.,
vol. 5, 1864, p. 404 (reference).

Myctophum angustidens Carus, Prodr.
Zool. Mediter., vol. 2, 1893, p. 566 (compiled).

A nominal species I have not been
able to place.

Analysis of species

3750

a. Pectoral photophores level, in continuous series; second and third ventrals not elevated above level of following organs in same series; supraventral always below lateral line; no photophores above lateral line.

b. Subpectoral photophores not above pectoral fin base; 2 posterolaterals in oblique or subvertical series; no photophores on cheek; precandals distinctly separate from anals.

c. Six precandals; 6 pectorals; 5 subpectorals; anals 10+7, first anteroanal elevated; head $3\frac{1}{4}$; eye $3\frac{2}{3}$ in head; Dorsal 18; Anal 20. nicholsi.

c.² Three or 4 precandals; 5 pectorals,

d. Anals 10+7; first anteroanal elevated; 5 ventrals; scales 44.

e. Dorsal 15; Anal 18; 1 suprapectoral;

3 supracaudal and 9 infracaudal.

D. 12, A. 18, I, origin opposite base of eleventh dorsal ray; pectoral 15, length $1\frac{1}{5}$ in total head; ventral $1\frac{7}{8}$, rays 8. Length 32 mm. without caudal. (Beebe.)

Bermuda.

minute antorbital photophore, ³⁷⁵⁷
braueri.

e.² Dorsal 18 or 19; 2 suprapectorals; 2
preocular luminous organs. piabilis.

d.² Anteroanals 5 to 7 (anals total 9 to 13);
5 (4) ventrals; Dorsal 12 to 14; Anal 13 to 15.

f.¹ Predorsal luminous scales 5 to 12, 4 to 6
between dorsal and adipose fin, 3 or 4
supracaudals, 7 to 10 infracaudals, 4
to 6 along anal base; no luminous scales
between ventrals and anal; head 3;
eye $3\frac{1}{3}$. maderensis.

f.² Circle of 6 small luminous patches
on top of head; 9 predorsal luminous
patches and 5 between ventral and
anal. polyphotis.

f.³ Supracaudal and infracaudal
luminous scales; luminous scales along
anal base and middle of belly;
head 3 to $3\frac{1}{2}$; eye $3\frac{1}{2}$ in head.
townsendi.

Lampanyctus septilucis Beebe

Lampanyctus septilucis Beebe,

Zoologica N. Y. Zool. Soc., vol. 13, no. 4,
March 1932, p. 68, fig. 15. Seven
miles south-southwest of Hansuch,
Bermuda, 700 fathoms.

Depth $5\frac{2}{3}$; head $3\frac{4}{5}$. Snout $6\frac{1}{5}$
in head from snout tip; eye $5\frac{2}{3}$,
 $1\frac{1}{5}$ in snout; maxillary extends $2\frac{1}{4}$
eye diameters behind eye, length $1\frac{2}{5}$
in head from snout tip; interorbital
rather low. Gill rakers $5+13$.

Scales 39 in lateral line.

One minute antorbital photophore
between eye and lower part of nostril;
3 or 4 very small postorbitals close
along hind eye edge; 2 operculars,
upper nearly level with upper
subpectoral, lower clearly lower than
lower subpectoral; 1 shoulder

f.⁴ Supracaudal and infracaudal ³⁷⁵²
luminous scales, along anal base
and between ventrals and vent;
head 3 to 3½; eye 3 to 3½. warmingi.

b.² Upper subpectoral above pectoral base.

g.¹ Three photophores on each cheek,
1 at upper end of preopercle and 2 along
upper maxillary edge; 3 posterolaterals,
2 side by side and third below front
one. procerum.

g.² No photophores on cheek; dorsal
rays more numerous than anal
rays.

h.¹ One posterolateral; scales 36 to 38;
anal spots 7+4; Dorsal 26; Anal
18 or 19. candispinosus.

in horizontal series
h.² Two posterolaterals; anals 9+7;
Dorsal 16; Anal 14. margaritiferus.

in horizontal series
h.³ Two (3) posterolaterals; anals
7 to 9+5 to 7; scales 39 to 42; Dorsal

spot, before operculars; 5 pectorals,
first interval greatest, fourth
elevated nearly level with pectoral
fin origin; 1 suprapectoral, before
subpectorals; 2 subpectorals, upper
little before bases of supero median
pectoral rays, lower little posterior
before bases of lowest pectoral rays;
4 ventrals; ^{6 or 7 for 8 or 9, anteroanals arched,} ~~third elevated level~~
~~posteroanals behind anal~~
~~with second supraanal; 3 supraanals,~~
second but slightly highest; 3
supraanals, greatly angulate, first
level with second and over and before
third ventral, second supraanal
little behind fourth ventral and
closer to third which close below
lateral line; 2 posterolaterals, in
inclined line with last anteroanal,
first nearer second than last anteroanal,
second close below lateral line; 4
precaudals, continuous with
posteroanals, third little elevated
and fourth little advanced from third
close on lateral line. Luminous scales

3753

21 to 24; Anal 17 to 20, origin
midway between hind eye edge
and caudal base.

i.¹ Supraventral at lower third or
 $\frac{2}{5}$ between lateral line and
ventral fin origin. elongatus.

i.² Supraventral at upper $\frac{2}{5}$
between lateral line and
ventral fin origin. hoffmani.

h.⁴ Two (3) posterolaterals in horizontal
series; anals 7 to 9 + 4 to 6; Dorsal 21
or 22; Anal 18 or 19, fin origin
distinctly nearer caudal base than
hind eye edge. resplendens.

h.⁵ Three posterolaterals in horizontal
series; anals 9 + 4; scales 46; Dorsal
20 or 21; Anal 16. castaneus.

a.² Fourth pectoral elevated well above rest of
series; subpectorals not above pectoral
fin base.

3754

i. Luminous scales not confined to caudal peduncle and adipose fin base, also present along dorsal and anal fin bases, and at paired fins; no organs on lower part of cheek or shoulder; first supraanal always below second and far below level of supraventral; pectorals usually long; second (not third) ventral spot elevated.

j. Supraventral far below lateral line; suprapectoral in or above lateral line; uppermost supraanal, postero-lateral and precaudal above or close below lateral line; luminous scales along anal base and on caudal peduncle; ventral spots 5; precaudals 3; scales on caudal peduncle enlarged.

k. First or lower subpectoral below or behind upper.

supralateralis.

3755

h.² First or lower subpectoral
before and well below upper.
blackii.

j.¹ Supraventral at or close to
lateral line; luminous scales
along bases of dorsal and anal.

l.¹ Eye little less than 3; luminous
glands on top of head; luminous
scales below throat, above paired
fin bases, along dorsal and anal
bases and on caudal peduncle;
upper supraanal, posterolateral
and precaudal above lateral
line; 3 small postorbitals;
3 precaudals; 5 ventrals;
tail scales not greatly enlarged.
photothorax.

l.² Eye 3 to $3\frac{1}{3}$; luminous scales
only at dorsal, anal and ventral
bases and on caudal peduncle;
upper supraanal and posterolateral
in lateral line, upper precaudal
above same; anals 4 to 6 + 3 to 5;

3756
3 precaudals; 5 ventrals; 3
postorbitals. longipes.

l.³ Eye $3\frac{2}{3}$; 6 ventral spots; 4
precaudals; anals 4 to 6 + 5 or 6;
no postorbitals; luminous scales
on caudal peduncle and at dorsal,
anal and ventral bases. goussé.

l.⁴ Eye 3 to 4; anals 4 to 6 + 5 to 7;
precaudals 3 or 4; 5 ventrals;
no luminous scale at ventral base.
güntheri.

l.⁵ Eye 6 to 7; 5 ventrals; luminous
scales on caudal peduncle, at
dorsal, anal and ventral bases
and close below pectoral bases;
lateral line scales greatly enlarged.
subpectoralis.

(i.²) Luminous scales only on caudal
peduncle, but series of smaller,
roundish, luminous glands, along
each side of back from nape to
behind dorsal fin; 2 photophores

on each cheek; lateral line scales ³⁷⁵⁷
not enlarged. photonotus.

i.³ Luminous sometimes at or before
adipose fin, but otherwise only on
caudal peduncle; no dorsal glands.

u.¹ No photophores on cheeks or
shoulder.

u.¹ Precaudals 5, well separated
from last posteroanal; anals
8 + 5; suprapectoral, supra-
ventral, upper supraanal,
posterolateral and precaudal
all well below lateral line;
5 pectorals; 5 ventrals. ^{hectoris} ~~argenteus~~.

u.² Precaudals 2 to 4, often confluent
with last posteroanal.

o.¹ Pectoral fin long, reaching to
or far beyond anal origin.

p.¹ Anals 5 + 7 (4 precaudals);
supraventral midway

3758

between lateral line and
ventral fin base; eye 6.
tenuiformis.

P.² Anals 5 to 7 + 8 to 10 (4 preanals);
first and second supraanal
in line passing through third
supraanal, supraventral and
fourth pectoral; Dorsal 15 or 16;
Anal 17 or 18. nobilis.

P.³ Anals 6 to 8 + 7 to 9 (4 preanals);
first and second supraanal not
in line with third supraanal,
supraventral and fourth pectoral;
Dorsal 12 to 14; Anal 18 to 20.
festivus.

O.² Pectoral very small or vestigial,
not reaching beyond ventral base,
sometimes entirely absent.

G.¹ Dorsal origin postmedian;
5 ventral photophores.
nigrescens.

3759
g.² Dorsal origin median or premedian.

r.¹ Scales 30 to 33 in lateral line; anals 6+5 (4 precandals); eye 4 to 4 $\frac{1}{3}$; Dorsal 12; Anal 14. mexicanus.

r.² Scales 33 or more; Dorsal 12 to 19 (12); Anal 14 to 25 (over 15).

spots
z.¹ Ventrals 5.

z.² Second and third ventral spots elevated; anals 5 or 6 + 6; eye 4; scales 35; Dorsal 13 to 15; Anal 14 to 16. oculeus.

z.³ Only second ventral elevated; head 3 to 3 $\frac{1}{2}$.

z.⁴ Supraanals angulate.

3760
iv.¹ First supraanal level
with second, above or before
fourth ventral; fourth
pectoral below pectoral
fin base; anals 6 + 5 (4
precaudals). microchir.

iv.² First supraanal lower
than second, above interval
between fourth and fifth
ventral; fourth pectoral
above or level with pectoral
fin base; anals 5 to 7 + 6 to 8.
micropterus.

te.² Supraanals in straight
oblique line. nanno chir.

s.² Ventral spots 4.

iv.¹ Supraanals in straight
oblique line; head $3\frac{3}{5}$ to
 $3\frac{4}{5}$; eye $3\frac{1}{2}$. leucopsarus.

iv.² Supraanals angulate.

3761

w. Second ventral spot
behind first.

x. Supraventral at lower
third, ^{to midway} between lateral line
and ventral fin origin.

y. Scales 36 or 37. macdonaldi.

y. Scales 30 to 32. idostigma.

x. Supraventral at or
close to lateral line,

z. First supraanal over
interval between second
and third ventral; last
precaudal over penultimate
precaudal; anals 6 to 8 +
6 to 8. ater.

z. First supraanal above
interval between third and
fourth ventral; last
precaudal well behind
penultimate precaudal;
anals 5 to 7 + 4 to 6. cuprarius.

x. Supraventral much nearer
lateral line than ventral fin;
scales 35.

niger.

3762
z.³ First supraanal over
interspace between third
and fourth ventrals; last
precaudal well behind
penultimate precaudal;
anals 7 to 9 + 6 to 8. lineatus.

w.² Second ventral over first;
anals 4 or 5 + 8 to 10. turneri.

m.² No photophores on cheeks, 1 on
each shoulder.

aa.¹ Anal origin below ^{middle} or under
last half of dorsal fin; anals
4 to 6 + 8 to 10.

bb.¹ Lower subpectoral nearer upper
subpectoral. macropterus.

bb.² Lower subpectoral nearer
second pectoral spot than upper
subpectoral. bensoni.

aa.² Anal origin below base of
penultimate dorsal ray; anals

6 + 8 or 9.

3763
omostigma.

m.³ One photophore on each cheek
and 1 on each shoulder.

cc.¹ Eye $6\frac{2}{5}$; anals 7 + 6.

punctatissimus.

cc.² Eye $4\frac{1}{2}$ to $4\frac{2}{3}$; anals 8 + 8 or 9.

jordanii.

cc.³ Eye 3; anals 7 + 4. stilbeus.

m.⁴ No photophores on shoulder, 1
(or many minute ones) on each cheek.

dd.¹ Supraventral midway
between lateral line and ventral
fin base; anals 4 to 6 + 5 to 7.

pusillus.

dd.² Supraventral midway between
lateral line and ventral fin
base; anals 8 + 7 or 8. ritteri.

3764

dd.³ Supraventral twice as
far from ventral fin base
as from lateral line; anals
8 + 7 or 8. regalis.

dd.⁴ Supraventral at lateral
line; anals 4 to 6 + 5 to 7.
~~prosp.~~ galatus.

dd.⁵ First and second anteroanal
lower than line through rest
of series, second even lower
than first; luminous scale at
adipose fin; anals 9 or 10 + 8 or 9.
intricarius.

m.⁵ No photophores at shoulder; 2
photophores on each cheek; no luminous
adipose scale; anals 5 to 7 + 6 to 8.
gemmifer.

m.⁶ No photophores at shoulder, 3 on
each cheek; luminous scale at adipose
fin; scales 38. crocodilus.

m.⁷ No photophores at shoulder, 2 on each
cheek; no luminous scale at adipose fin. tanningi.

3765

Lampanyctus nicholsi Gilbert

Lampanyctus nicholsi Gilbert, Bull.

Amer. Mus. Nat. Hist., vol. 30, 1911, p.
17, fig. North of Falkland Islands.

— Parr, Bull. Bingham Oceanogr.

Collection, vol. 3, art. 3, Dec. 1928, p. 78

(diagnosis in key). — Horman, Discovery

Rep., vol. 2, 1930, p. 326 (S. $50^{\circ}45'$ W. 56°

$33'$; S. $49^{\circ}22'$ W. $54^{\circ}48'$; S. $44^{\circ}42'30''$ E.

$17^{\circ}47'$; Drake Strait S. $58^{\circ}27'30''$ W. 67°

$55'$; S. $46^{\circ}55'$ W. $60^{\circ}40'$; 0 to 124 meters).

Depth $5\frac{1}{6}$; head $3\frac{1}{4}$, width $2\frac{1}{3}$.

Snout $6\frac{3}{4}$ in head; eye $3\frac{7}{8}$,

greatly exceeds snout, $1\frac{1}{2}?$ in

interorbital; maxillary extends $1\frac{1}{5}$

eye diameters behind eye, slender,
length $1\frac{1}{3}$ in head; interorbital low.
Gill rakers $10 + 22$, long.

Scales 42 in lateral line, all
fallen.

Small antorbital photophore
between orbit and lower part of
nostril; 2 operculars, upper larger,
level with interval between subpectorals;
3 branchiostegals; 6 pectorals, level,
first interspace greatest; 1
suprapectoral, little nearer lateral
line than pectoral base, slightly
advanced from over upper subpectoral
but behind first pectoral; 2 subpectorals,

Antarctic Terra Nova Exped., Nat. Hist.
Rep. Zool., vol. 1, 1914-16, p.

— Parr, Bull. Bingham Oceanogr. Collection,
vol. 3, art. 3, Dec. 1928, p. (88) 110, text fig. 20
(Atlantic materials); vol. 2, art. 4, Oct. 1931,
p. 28, fig. 10 (discussion).

upper little advanced though close
to lower and both before pectoral
fin base; 5 ventrals, equidistant, level;
1 supraventral, little nearer ventral
base than lateral line; anals 10 + 7,
level, posteroanals behind anal
fin base, first anteroanal elevated
till level with second or median
supraanal; 3 supraanals, first
or lowest only slightly higher than
last ventral, median vertically
below uppermost or below and
slightly posterior, uppermost
little below lateral line or over
vent; 2 posterolaterals, in oblique

Lampanyctus macropterus (Brauer)

Myctophum (Lampanyctus) macropteron

Brauer, Zool. Anzeiger, vol. 28, 1904, p. 404,
fig. 5. Indian Ocean;

* Deutsch. Tiefsee Exped. Valdivia, vol. 15,

Tiefsee-Fische, 1906, p. 249, text fig. 166

north of Coos Island; Bengal Bay; south of Ceylon;
(~~Gulf of Guinea~~; west coast of Sumatra; north
of Chagos Archipelago; ^{between} ~~east of~~ ^{and Zanzibar;} Seychelles; ~~800~~
North east coast of Africa; Gulf of Aden;
~~to 600 meters west of Chagos Archipelago~~). —

Pappenheim, Deutsch. Südpolar Exped., vol. 15,

Zool. 7, 1914, p. 197 (south west of Sierra
Leone, 3000 meters).

Lampanyctus macropterus Gilbert, Mem.

Carnegie Mus., vol. 6, no. 2, Aug. 1913, p. 106

(near Kagoshima). — Regan, Fishes Brit.

3768

line passing behind last anteroanal,
upper little below lateral line;
6 precaudals, equidistant, in
slight curve above bases of lower
rudimentary caudal rays and
last well below level of lateral line.
Series of very large chromatophores,
1 to each scale, on second series of
scales below dorsal base and back
to upper caudal lobe.

D. III, 14, I, first branched ray $1\frac{2}{5}$ in head; adipose fin 4; A. IV, 16, first branched ray $1\frac{4}{5}$; caudal $1\frac{1}{10}$, forked, least depth of caudal peduncle $3\frac{1}{3}$; pectoral $2\frac{1}{2}$; ~~anterior dorsal~~ ventral $1\frac{5}{6}$.

Myctophum megalops Peters, Montasber.
Abad. Wiss. Berlin, 1864, p. 393. Cape Horn.

Dark slate. Opercles jet black.
Length 65 mm. (Gilbert.)

South Atlantic, Falkland
Island, Drake Strait. Norman's
description gives: depth $5\frac{1}{4}$ to 6;
head $3\frac{1}{3}$ to $3\frac{2}{3}$; eye $3\frac{3}{4}$ to 4 in
head, about equals interorbital;
scales 43 to 45; last pectoral
photophore little elevated; anals
9 to 11 + 7; 2 or 3 posterolaterals;
6 to 9 precaudals; length to 77 mm.

vol. 26, no. 6, 1908, p. 220 (N. Lat. 3° - 16° W.
Long. 135° - 149°); Bull. Amer. Mus. Nat.
Hist. New York, vol. 30, art. 2, March 10, 1911,
p. 15 (S. Lat. 1° W. Long. 118°); Mem. Carnegie
Mus., vol. 6, no. 2, 1913, p. 73 (south of Kagoshima). - Jordan and Jordan,
Mus., vol. 10, no. 1, Dec. 1922, p. 11 (reference).
(Mem. Carnegie)

— Fowler and Ball, Bull. Bishop Mus.,
no. 26, 1925, p. 7 (Wake Island). — Fowler,
Mem. Bishop Mus., vol. 10, 1928, p. 67 (Wake
Island material; Hawaii).

Myctophum (Myctophum) spinosum Brauer,
Deutsch. Tiefsee Exped. Valdivia, vol. 15,
Tiefsee - Fische, 1906, p. 196, text figs. 113 -
114 (north of New Zealand).

Myctophum spinosum Weber, Siboga
Exped., vol. 57, Fische, 1913, p. 87 (Celebes

Lampanyctus braueri (Lönnerberg)

Myctophum (Lampanyctus) braueri

Lönnerberg, Zool. Anzeiger, vol. 28, hr. 23,

April 25, 1905, p. 764. S. $48^{\circ}54'$ W. $51^{\circ}40'$;

Wiss. Ergeb. Schwed. Südpolar-Exped.,

vol. 5, Zool. 1, 1905, p. 64, fig. 1 (type). —

Brauer, Deutsch. Tiefsee Exped. Valdivia,
vol. 15, Tiefsee-Fische, 1906, p. 230, fig. 150
(compiled).

Lampanyctus braueri Regan, Trans.

Roy. Soc. Edinburgh, vol. 49, pt. 2, May
23, 1913, p. 234 (S. $69^{\circ}33'$ W. $15^{\circ}19'$, 2620

fathoms); Brit. Antarctic "Terra Nova"

Exped., Zool., vol. 1, no. 1, 1914, p. 38 (off

Coats Land, S. $49^{\circ}56'$ W. $49^{\circ}56'$). —

Waite, Australas. Antarctic Exped.
Ser. C. Zool. Botany, vol. 3, pt. 1, Fishes,
1916, p. 61, figs. 14+14a (Macquarie
Island). — Parr, Bull. Bingham
Oceanogr. Collection, vol. 3, art. 3, Dec.
1928, p. 78 (diagnosis in key). —
Horman, Discovery Rep., vol. 2, 1930, p.
327 (S. $49^{\circ}22'$ W. $54^{\circ}48'$, 90 meters; S.
 $48^{\circ}09'$ W. $52^{\circ}50'$, 45 meters; S. $53^{\circ}25'$
W. $35^{\circ}15'$, 1025 to 1275 meters; S. $46^{\circ}56'$
W. $46^{\circ}03'$, 1050 to 1350 meters; S. $35^{\circ}14'$
E. $6^{\circ}49'$, 850 to 1100 meters).

Depth $5\frac{1}{4}$; head $3\frac{1}{8}$. Snout $4\frac{2}{3}$
in head; eye $4\frac{1}{2}$, greater than snout;
maxillary extends nearly eye diameter
behind eye, slender, not reaching
hind preopercle edge, length $1\frac{1}{2}$ in
head; interorbital low.

One antorbital photophore, little
below middle of front eye edge; 2
operculars, upper little larger; 3
equidistant branchiostegals; 5 pectorals,
first interspace twice that of other
interspaces; 1 suprapectoral, little
before and above pectoral fin origin
or little closer to lateral line; 2
subpectorals, upper close below

bases of lowest pectoral rays and lower close below; 6 ventrals at same level; 1 supraventral, over ventral fin base about midway to lateral line; 10 + 7 anals, first anteroanal close above and little before second, all posteroanals behind anal fin base; 2 supraanals, first level with first or elevated anteroanal and over last ventral, second or uppermost close below lateral line opposite anal fin origin; 2 posterolaterals, lower little behind and above last anteroanal and upper close below lateral line, all 3 in inclined line;

4 precaudals, lowest 3 together at lower front tail edge and fourth elevated close below end of lateral line at caudal base.

D. III, 12, I, first branched ray $2\frac{2}{5}$ in head; adipose fin 3; A. III, 15, I, first branched ray $3\frac{1}{5}$; caudal $1\frac{1}{3}$, deeply forked; least depth of caudal peduncle $3\frac{2}{3}$; pectoral 2; ventral 2.

Length mm. (Lönnerberg.)
Antarctic Ocean.

Lampanyctus piabilis Whitley

Lampanyctus piabilis Whitley, Records
Austral. Mus., vol. 18, no. 3, March 25, 1931,
p. 103, fig. 1. Macquarie Island.

Lampanyctus braueri (not Linnberg)

Waite, Australas. Antarctic. Exped., Sec.
C. Zool. Botany, vol. 3, pt. 1, Fishes, 1916,
p. 61, figs. 14-14a (Macquie Island
specimens). — Parr, Bull. Bingham
Oceanogr. Collection, vol. 3, art. 3, Dec.
1928, p. 78 (part). — Norman, Discovery
Rep., vol. 2, 1930, p. 327 (part).

Depth $5\frac{7}{8}$; head $3\frac{1}{2}$. Snout $6\frac{1}{4}$ in head from snout tip; eye $3\frac{1}{3}$, greatly exceeds snout; maxillary extends eye diameter behind eye, slender, length $1\frac{1}{4}$ in head from snout tip; interorbital apparently level with top of eye.

Scale 42 in lateral line.

Two well developed luminous glands on front edge of eye with orbital border, upper above nostrils and lower at anteroinferior edge extending backwards to below pupil;

1 opercular, -above level of
maxillary, second perhaps lower;
5 pectorals, first interval greatly
longest, fifth little before ventral
origin; 1 suprapectoral at upper
third between lateral line and
pectoral fin origin; 2 subpectorals,
upper close above pectoral fin
origin, lower close below lower ^(?)
pectoral ray bases -and both spots
in slightly inclined series from
vertical to include suprapectoral;
5 ventrals, in slightly arched series,

equidistant; 1 supraventral, midway
between ventral fin base and
lateral line; anals 7 or 8 + 10,
last anteroanal slightly elevated
from level of others and posteroanals
all level and behind anal fin base;
3 supraanal in slightly inclined
series posteriorly with second close
above first and third close below
lateral line, series sloping little
posteriorly below; 2 posterolaterals,
slightly inclined series with last
anteroanal, equidistant and second

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or upper little below lateral line;
4 precaudals, lower 3 continuous
with last posteroanals and fourth
^{posterior}
close below end of lateral line.

D. III, 15, first branched ray $2\frac{1}{10}$
in total head; adipose fin $4\frac{2}{5}$; A.
III, 15, first branched ray $1\frac{9}{10}$; caudal
 $1\frac{3}{5}$, emarginate; least depth of
caudal peduncle $3\frac{1}{8}$; pectoral $3\frac{4}{5}$?;
ventral $1\frac{4}{5}$.

Length 103 mm. without caudal.

(Whitley.)

Antarctic Ocean.

Lampanyctus maderensis (Lowe).

Scopelus maderensis Lowe, Proc. Zool.
 Soc. ^{London,} vol. 7, 1839, p. 87. (Madeira); Trans.
 Zool. Soc. London, vol. 3, pt. 1, 1839, p. 14
 (Madeira); Proc. Zool. Soc. London, 1850,
 p. 250. — Günther, Cat. Fishes Brit. Mus.,
 vol. 5, 1864, p. 412 (Mediterranean, Madeira,
 type). — Carus, Prod. Fauna medit., vol. 2,
 1893, p. 565 (compiled). — Collett, Res.
 Camp. Sci. Monaco, vol. 10, 1896, p. 114 (off
 Newfoundland Bank, Cape Finisterre).
 — Raffaele, Mitth. Zool. Stat. Neapel,
 vol. 9, 1889, p. 184, pl. 7, fig. 9. — Lütken,
 Vid. Medd. Naturh. Foren. København,
 1891, p. 208 (Vestmanöerne, Iceland);

fin base; 3 supranals, first over or
little behind fourth ventral, second
little lower.

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Kon. Dansk Vidensk. Selsk. Sker.
Köbenhavn, ser. 6, vol. 7, 1892, p. 262,
fig. 21 (Iceland).

Ceratoscopelus maderensis Goode and Bean,
Oceanic Ichth., 1895, p. 82, pl. 24, fig. 91
(N. 36° to 39° W. 68° to 74° , 1686 fathoms;
Messina). — Roule, Rés. Camp. Sci.

Monaco, vol. 52, 1919, p. 30 (N. $36^{\circ}17'$ W. $28^{\circ}53'$, surface).

— Vaillant, Rés. Camp. Sci. Monaco, vol.
52, 1919, p. 130 (N. $38^{\circ}27'$ W. $26^{\circ}30'45''$, surface).

Ceratoscopelus madeirensis Jordan and
Evermann, Bull. U. S. Nat. Mus., no. 47,
pt. 1, 1896, p. 557 (compiled; error).

Myctophum (Lampanyctus) maderense
Brauer, Zool. Anzeiger, vol. 28, ^{Jan. 10, Dec. 20,} 1904, p.

394 (diagnosis in key). — Brauer,
 Deutsch. Tiefsee Exped. Valdivia, vol. 15,
 Tiefsee-Fische, 1906, p. 227, text fig. 148
^{N. 24° 43' 4" W. 17° 1' 3"} ^{N. 42° W. 14°}
 (south of Canaries; between Portugal
 and Azores). — Zugmayer, Rés. Camp.
 Sci. Monaco, vol. 35, 1911, p. 33 (N. 37° 28'
 W. 25° 53' 30", 1000 fathoms; N. 38° 2' E. 1° 50'
 30", 1700 fathoms; N. 37° 46' W. 0° 5', 520
 fathoms). — ^{Murray and} Hort, Depths of the Ocean,
^{N. 28° 52' W. 14° 16'}
 1912, p. 613 (off Canaries, 2170 meters).
Lampanyctus maderensis Regan, Brit.
 Antarct. Terra Nova Exped., Zool., vol. 1,
 no. 4, 1916, p. 140, pl. 6, fig. 6 (S. 18° W.
 31° 45', surface). — Taaning, Rep.
 Danish Oceanogr. Exped. Medit., no. 5, vol.

2, A. 7, 1918, p. 93, figs. 37-38 (Mediterranean, Atlantic); Vidensk. Medd. Dansk. Naturh. Foren. København, vol. 86, 1928, p. 64 (North Atlantic, Mediterranean; diagnosis in key). — Parr, Bull. Bingham Oceanogr. Collection, vol. 3, Art. 3, Dec. 1928, p. 78 (compiled).

Scopelus bonapartii Valenciennes, Hist. Nat. Poiss., vol. 22, 1848, p. 449. Nice. — Johnson, Ann. Mag. Nat. Hist., vol. 10, 1862, p. 281 (Madeira). — Canestrini, Fauna Italia, Pesce, 1874, p. 125 (Sicily). — Moreau, Poiss. France, vol. 3, 1881, p. 507, fig. 203 (Nice).

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Scopelus doderleini Facciola, Nat. Sicil.
Anim., vol. 1, 1882, p. 193, pl. 10, figs. 1-4.
Messina.

Scopelus acanthurus Facciola, Nat. Sicil.
Anim., vol. 1, 1882, p. 166. Messina.

Depth $4\frac{3}{4}$ to 5; head 3 to $3\frac{1}{8}$, width
 $2\frac{2}{5}$. Snout $5\frac{1}{8}$ to $5\frac{1}{4}$ in head from
snout tip; eye $3\frac{1}{8}$, greater than snout
or interorbital; maxillary extends $\frac{1}{2}$
to $\frac{3}{5}$ eye diameter beyond eye but not
quite to well inclined hind preopercle
edge, slender, length $1\frac{1}{3}$ to $1\frac{2}{5}$ in
head from snout tip; interorbital $4\frac{2}{5}$,
little concave. Gill rakers 9+17, lanceolate,
 $1\frac{2}{5}$ in interorbital; gill filaments $\frac{1}{2}$ of eye.

Scales 34 to 37 in lateral line, slightly enlarged; 3 above, 3 below, 13 predorsal to occiput. Caudal base scaly. Scales with 2 basal radiating striae; circuli fine, complete.

Small antorbital photophore slightly below middle of front eye edge; 2 opercular photophores, upper little larger and in line with lower eye edge passing between subpectorals; 3 equidistant veiled branchiostegals; 5 pectorals, first interspace greatest, fifth photophore little elevated or before ventral fin origin; 1 suprapectoral close below lateral line and before

3786

pectoral fin origin; 2 subpectorals,
first or lower rather close below
upper or midway between upper and
second pectoral, upper close before
bases of median pectoral rays; 5
ventrals, second and third slightly
higher than others; 1 supraventral
midway between lateral line and
ventral fin origin; 5 or 6 + 5 to 7 anals,
second anteroanal slightly elevated
in series, posteroanals behind anal
fin base; 3 supraanals, first lowest,
over and close behind last ventral,
second still higher or midway below
lateral line and ^{third} close below lateral

line opposite anal fin origin; 2 posterolaterals, first or lower over and little posterior from last anteroanal and upper close below lateral line below adipose fin; 4 precaudals, first to third close and little inclined progressively, fourth close below lateral line end. Supracaudal luminous organs 3, infracaudals 8 to 10, each side of anal base about 6 and 4 or 5 in median row behind ventral fin bases.

D. III or IV, 9, I or 10, I, first branched ray $1\frac{1}{2}$ to 2 in total head length; adipose fin 4; A. III, 11, I,

first branched ray 2 to $2\frac{1}{2}$; caudal $1\frac{1}{6}$ to $1\frac{1}{2}$, well forked; least depth of caudal peduncle $3\frac{1}{5}$ to $3\frac{2}{5}$; pectoral $1\frac{1}{10}$ to $1\frac{2}{3}$; ventral $1\frac{4}{5}$ to $2\frac{1}{4}$.

Brown, scale pockets dark. Scales all with iridescent silvery reflections. Opercles blackish, also inside gill opening. Iris silvery gray to white. Fins whitish.

Atlantic and Arctic Oceans.

21681 U.S.N.M.

3789

No. 219. Length 74 mm.

21690 U.S.N.M. Georges Banks.

Schooner "John Smith." No. 199. Length 68 to 74 mm. 2 examples.

28934 U.S.N.M. N. 39° W. 69°

Fish Hawk Collection. Length 74 mm.

28978 U.S.N.M. N. 39° 58' W. 70° 06'.

Bureau of Fisheries. Length 64 to 80 mm. 3 examples. In poor preservation.

32811 U.S.N.M. N. 36° W. 74°

Albatross Collection. Length 79 mm.

33564 U.S.N.M. N. 39° W. 68°

Albatross Collection (2101). Length 35 to 61 mm. 2 examples.

40074 U.S.N.M. Inessina, Italy. Royal Zoological Museum Florence. Length 63 to 65 mm. 2 examples.

43810 U. S. N. M.

Bureau of Fisheries. Length 67 mm.

49381 U. S. N. M. Messina. M. Bellotti,

Length 68 to 77 mm. 4 examples.

83861 U. S. N. M.

Albatross Collection (2750). Length 19 to 23 mm.
2 examples.

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Lampanyctus polyphotus Beebe

Lampanyctus polyphotus Beebe, Zoologica
N. Y. Zool. Soc., vol. 13, no. 4, March 1932,
p. 67, fig. 14. Five miles south of Honsuch,
Bermuda, 900 fathoms.

Depth $4 \frac{9}{10}$; head $3 \frac{1}{5}$. Snout $5 \frac{2}{3}$ in
head; eye $3 \frac{9}{10}$, greater than snout;
maxillary extends $\frac{3}{4}$ eye diameter
behind eye, length $1 \frac{1}{2}$ in head;
interorbital low.

Scales 36 in lateral line.

Pectoral photophores 5, fifth elevated
before ventral fin origin; 1 suprapectoral,
little below lateral line, in line with
upper subpectoral and third pectoral;
2 subpectorals, first or lower over
second pectoral, upper close before
bases of uppermost pectoral rays;
5 ventrals, first lowered, fifth
little elevated; 1 supraventral, little
below middle between lateral line and
ventral fin origin; anals 6 + 6.

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posteroanals behind anal fin base;
3 supraanals broadly angulate, first
behind last last ventral, second
progressively higher and posterior and
third close below lateral line; 2
posterolaterals, in oblique line with
last anteroanal, second little nearer
first and third close below lateral
line; 4 precaudals, first and second
side by side, third little higher
and posterior and fourth which
close below lateral line. Six luminous
patches in circle on top of head; 9
predorsal, along dorsal base 7 or 8; 2
behind dorsal; 7 supracaudal; 5
along gill opening; 1 above pectoral fin
base; 1 above ventral fin base; 5
between ventrals and vent; 6 along
anal base; 12 infracaudal.

D. 13, I; A. 14, origin slightly before
hind end of dorsal base; pectoral rays
14, fin $1\frac{1}{8}$ in head; ventral 2, rays 8.
Length 49 mm. without caudal.
(Beebe.)

Bermuda.

Lampanyctus townsendi (Eigenmann and Eigenmann)
Myctophum townsendi Eigenmann and Eigenmann,
 West American Scientist, 1889, p. 125. Cortez
 Banks, near San Diego, California. —

Goode and Bean, Oceanic Ichth., 1895,
 p. 512 (reference).

Myctophum (Lampanyctus) townsendi
Brauer, Deutsch. Tiefsee Exped. Valdivia,

Jordan and Evermann, Bull. U. S. Nat. Mus.,
 no. 47, pt. 1, 1896, p. 558 (compiled). —

Lampanyctus townsendi Gilbert, Mem.
 Mus. Comp. Zool., vol. 26, no. 6, 1908, p. 230,
 pl. 4 (La Huka Island, Marquesas
 Islands, to 300 fathoms); Mem. Carnegie
 Mus., vol. 6, no. 2, 1913, p. 98 (off southern

Lampanyctus townsendi (Eigenmann and Eigenmann)
Myctophum townsendi Eigenmann and Eigenmann,
 West American Scientist, 1889, p. 125. Cortez
 Banks, near San Diego, California. —

Goode and Bean, Oceanic Ichth., 1895,
 p. 512 (reference).

Myctophum (Lampanyctus) townsendi
Brauer, Deutsch. Tiefsee Exped. Valdivia,
 vol. 15, Tiefsee - Fische, 1906, p. 167 (diagnosis
 in key).

Lampanyctus townsendi Gilbert, Mem.
 Mus. Comp. Zool., vol. 26, no. 6, 1908, p. 230,
 pl. 4 (La Huka Island, Marquesas
 Islands, to 300 fathoms); Mem. Carnegie
 Mus., vol. 6, no. 2, 1913, p. 98 (off southern

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Japan, in 507 to 850 fathoms). — McCulloch, Records Australian Mus., vol. 14, 1923, p. 115, pl. 14, fig. 2.

— Parr, Bull. Bingham Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 79 (compiled). —

Fowler, Mem. Bishop Mus., vol. 10, 1928,

p. 68 (compiled). — Horman, Discovery Rep., vol. 2, 1930, p. 327 (S. $32^{\circ}46'W. 10^{\circ}$, 0-30 meters; S. $33^{\circ}07'40''E. 4^{\circ}30'20''$, 0-2000 meters; S. $41^{\circ}33'30''W. 17^{\circ}58'$, 110 meters; S. $35^{\circ}01'E. 10^{\circ}18'$, 0-250 meters; S. $13^{\circ}58'30''E. 11^{\circ}43'30''$, 0-200 meters; S. $2^{\circ}43'30''W. 00^{\circ}56'30''$, 125-175 meters; S. $2^{\circ}49'30''W. 9^{\circ}25'30''$, 800-1000 meters; S. $00^{\circ}56'W. 14^{\circ}08'30''$, 0-250 meters; N. $4^{\circ}33'15''W. 16^{\circ}52'45''$, 100-150 meters; N. $8^{\circ}12'W. 18^{\circ}49'$, 0-120 meters; N. $12^{\circ}08'W. 20^{\circ}53'30''$, 0-163 meters).

Scopelus (Nyctophus) warmingi
Lütken, Kon. Danske Vidensk. Selsk.
 Skrift. Kjöbenhavn, ser. 6, vol. 7, 1892,
 p. 259, fig. 19. N. $32^{\circ}6'$ W. $39^{\circ}28'$; south of
 Azores.

Lampanyctus warmingii Goode and
Bean, Oceanic Ichth., 1892, pp. 80, 512
 (compiled).

Lampanyctus warmingi Taaning,
Vidensk. Medd. Dansk Naturh. Foren.
 Köbenhavn, vol. 86, 1928, p. 65 (North
 Atlantic; diagnosis in key). —

Parr, Bull. Bingham Oceanogr. Collection,
 vol. 3, art. 3, Dec. 1928, p. ⁽⁷⁹⁾91, text fig. 11
 (N. 21° to 32° W. 64° to 77° , 6000 to 1000 feet);
 Proc. & S. Nat. Mus., vol. 76, 1929, p. 13
 (type of Lampanyctus townsendi).

Myctophum (Lampanyctus) warmingi
Brauer, Zool. Anzeiger, vol. 28, Nr. 10,
 Dec. 20, 1904, p. 394 (diagnosis in key);
 Deutsch. Tiefsee Exped. Valdivia, vol. 15,
 Tiefsee - Fische, 1906, p. 229, text fig.
 149 (N. $24^{\circ}43'4''$ W. $17^{\circ}1'3''$, south of Canaries;
 N. $1^{\circ}51'$ E. $0^{\circ}31'2''$, Gulf of Guinea; S. 26°
 $3'6''$ E. $93^{\circ}43'7''$, off Cocos; S. $10^{\circ}8'2''$ E. $97^{\circ}14'$
 $9''$; N. $7^{\circ}1'2''$ E. $85^{\circ}56'5''$, Bay of Bengal;
 N. $4^{\circ}56'$ E. $78^{\circ}15'3''$, south of Ceylon;
 Mauritius). — Murray and Hjort, The

Depths of the Ocean, 1912, p. 613 (N. $31^{\circ}20'$
 W. $35^{\circ}7'$, 3886 meters, Gran Canaria to Fayal).

— Pappenheim, Deutsch. Südpolar Exped.,
 vol. 15, Zool. 7, 1914, p. 195 (S. $11^{\circ}19'$ W. $18^{\circ}34'$,
 1200 meters ^{South}, west of Ascension Island;
 S. $30^{\circ}21'$ W. $14^{\circ}2'$, 10 meters; S. $24^{\circ}55'$ W. $1^{\circ}18'$,
 1500 meters; N. $28^{\circ}42'$ W. $34^{\circ}33'$, 3000 meters;
 N. $29^{\circ}43'$ W. $34^{\circ}22'$, 10 meters). — Barnard,
 Ann. South African Mus., vol. 21, pt. 1,
 1925, p. 237 (off Cape Point, 600 fathoms).

Lampanyctus alatus (not Goode and
Bean) Breder, Bull. Bingham
Oceanogr. Collection, vol. 1, art. 1, 1927,
p. 17 (part).

Depth $4\frac{2}{5}$ to $4\frac{4}{5}$; head $2\frac{4}{5}$ to $3\frac{1}{8}$, width $2\frac{2}{5}$ to $2\frac{3}{5}$. Snout 6 to $7\frac{3}{4}$ in head; eye $3\frac{1}{4}$ to $3\frac{3}{4}$, greater than snout or interorbital; maxillary extends $\frac{2}{3}$ an eye diameter behind eye though not to slightly inclined hind preopercle edge, slender, length $1\frac{1}{2}$ to $1\frac{3}{5}$ in head; interorbital $3\frac{3}{4}$ to $3\frac{7}{8}$, level.

Gill rakers $4 + 11$, lanceolate, rather strong, also 4 more as rudiments above and 5 below; $1\frac{1}{2}$ in eye; gill filaments $1\frac{1}{3}$ in gill rakers.

Scales 38 in lateral line to caudal base, enlarged; 3 above,

Only known from the type,
No. 51096 A. N. S. P. Tananarive,
Madagascar. M. C. Lambertson.
Length 158 mm.

3 below. Caudal base scaly.³⁷⁹⁹
Scales very caducous, most all
fallen.

Small antorbital photophore
little below middle of front eye
edge; 2 operculars, upper
larger, in line from lower eye
edge passing between subpectorals
to lowest pectoral fin ray,
lower little below hind maxillary
end; 3 equidistant branchiostegals;
5 pectorals, first interspace
longest, only fifth spot slightly
elevated or before ventral fin
origin; 1 suprapectoral close
below lateral line well before
upper though above or over lower

Depth $2\frac{2}{5}$ to $2\frac{4}{5}$; head $3\frac{1}{3}$, width $2\frac{1}{5}$. Snout $2\frac{2}{3}$ in head from snout tip; eye 4 to $4\frac{1}{2}$, $1\frac{2}{5}$ to $1\frac{3}{5}$ in snout, subequal with interorbital; maxillary reaches opposite nostrils or to eye, length 3 in head from snout tip; teeth fine, in bands in jaws; interorbital little convex, with well developed ridge; preopercle evenly and finely serrated.

Scales 52 to 56 along above lateral line to caudal base, 44 to 49 along below lateral line; 6 to 8 scales above lateral line, 14 below, 16 predorsal forward to occiput, 9 or 10 rows on cheek. Suprascapula concealed.

D. XIII, 8 or 9, fourth spine $1\frac{4}{5}$ in head, second ray $1\frac{4}{5}$; A. III, 8, second spine 2, first ray $1\frac{9}{10}$;

3800

subpectoral; 2 subpectorals, first
or lower slightly in advance
of upper though much nearer
to and slightly advanced
over second pectoral, upper
close before middle of pectoral
fin base; 4 or 5 ventrals, all
at same level; 1 supraventral
little below middle to above
upper third in space between
lateral line and ventral fin
origin; 5 or 6 + 4 to 6 anals,
anteroanals slightly arched,
posteroanals all behind anal
fin base; 3 supraanals, first
or lowest above and little
behind fourth ventral, second
still posterior and higher though

lateral line, 24 below, 14 predorsal forward to occiput, 5 rows on cheek to preopercle ridge. Scales with 12 to 14 basal radiating striae, apical denticles 35 to 38, with 5 to 7 transverse series of basal elements; circuli moderate.

D. XII, 10, I, fifth spine $1\frac{2}{3}$ in head, second ray $1\frac{4}{5}$; A. III, 8, I, second spine $1\frac{3}{4}$, second ray $1\frac{2}{3}$; caudal $1\frac{1}{8}$, well forked, lower lobe slightly longer; least depth of caudal peduncle $2\frac{1}{3}$; pectoral $1\frac{3}{5}$; ventral $1\frac{1}{3}$.

Nearly olive lake on back and upper surfaces, which also tinged with dark gray, as if very indistinctly over

little closer to first than to third
which close below lateral line
above and slightly behind
second; 2 posterolaterals, first
nearer and behind last
anteroanal, second close below
lateral line behind first; 4
precaudals, first 3 arched at
lower rudimentary caudal rays
and fourth posterior at end of
lateral line. Supracaudal
luminous scales 4, infracaudal
10 to 12; 8 along anal base, 6
median behind ventral fin
bases and 1 median before ventral
fin bases; 5 or 6 luminous bodies
along each side of anal fin, 5
or 6 medially before vent with

Pale olive brownish above,
each row of scales with slightly
darker line. Spinous dorsal
edge dusky, also soft dorsal,
anal and caudal tinted
with dusky, other fins pale.
Iris pale slaty.

St. Paul Island, East Indies,
Philippines, Queensland.

47578 to 47592 A.N.S.P. Philippines.
Commercial Museum of Philadelphia.
Length 116 to 140 mm.

3802

last pair double; often 3 or 4 pairs on lower face of thorax and often luminous area at lower face of ventral bases; 10 predorsal; 8 between dorsal and adipose fin.

D. III, 10, I, first branched ray $1\frac{4}{5}$? in head; adipose fin 4 to $10\frac{1}{4}$; A. III, 11, I, first branched ray $2\frac{2}{5}$? to $2\frac{1}{2}$; caudal $1\frac{1}{8}$ to $1\frac{1}{3}$, well forked; least depth of caudal peduncle $3\frac{1}{3}$ to $3\frac{1}{2}$; pectoral 1 to $1\frac{1}{8}$; ventral $1\frac{3}{5}$ to $1\frac{4}{5}$.

Brown, head and iris largely blackish. Inside gill opening and pharynx blackish. Fins pale to whitish.

1520

third spine $2\frac{1}{2}$, third ray $1\frac{4}{5}$;
caudal $1\frac{1}{8}$, slightly emarginate
behind; least depth of caudal
peduncle 2; pectoral $1\frac{2}{5}$; ventral
 $1\frac{1}{4}$.

Uniform dark purplish brown,
each scale with lighter edge.
Soft dorsal and anal with
wide gray border. Pectorals
gray, with more or less distinct
basal bar. Ventral tips
translucent gray. Length 327mm.
(Ogilby and McCulloch.)

Atlantic, Pacific, Indian and Antarctic Oceans. Distinguished by the extensive glandular areas along the under surface of the postventral along each side of the anal base and both above and below on caudal about rudimentary caudal rays. It also approaches Lampanyctus minima Taaning in the arrangement of the supraventral photophores which are well below the lateral line. The precaudals differ, however, as there are 3 approximated below and 1 more close below the terminus of the lateral line.

depth $2\frac{3}{5}$; head $2\frac{9}{10}$ to $3\frac{1}{4}$,
 snout $2\frac{7}{8}$ to $3\frac{1}{10}$ in head; eye
 4 to $4\frac{1}{2}$, $1\frac{1}{3}$ to $1\frac{2}{5}$ ^{greater than interorbital} in snout;
 maxillary nearly reaches eye or
 $\frac{1}{5}$ in eye, $3\frac{1}{4}$ in head; teeth in
in young to less with age
 bands in jaws, outer row enlarged;
 interorbital little elevated, nearly
 flat, without bony ridges; preopercle
 evenly denticulate, denticles largest
 above rounded angle. Lower
 gill rakers 16, well developed,
 slender.

Scales 51 to 58 along above
 lateral line to caudal base, 46 to
 50 along below lateral line to
 caudal base; 9 or 10 above lateral
 line, 14 below, 8 or 9 rows on cheek.

D. XII, 13, fifth spine $2\frac{1}{2}$ in
 head, third ray $2\frac{1}{5}$; A. III, 9 or 10,

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D. 5497. Bantigui Island, N.
 64° W., 10 miles (N. $9^{\circ} 7' 15''$ E. $124^{\circ} 59' 30''$), between Leyte and Mindanao.
In 960 fathoms. August 3, 1909. Length
26 to 53 mm. 6 examples.

D. 5604. Bilatu (town), N. 26° W., 8.7
miles (N. $0^{\circ} 22' 30''$ E. $122^{\circ} 42' 30''$), Gulf
of Tomini, Celebes. November 15, 1909.
Length 36 mm.

D. 5233. Limasawa Island (S.), S. 70°
E., 19.50 miles (N. $10^{\circ} 00' 22''$ E. $124^{\circ} 45' 06''$),
between Bohol and Leyte. May 7, 1908.
Length 46 mm.

D. 5227. Pt. Origon, S. 44° E., 18.30
miles (N. $12^{\circ} 53' 45''$ E. $121^{\circ} 52' 30''$), east
of Mindoro. In 322 fathoms. May 5, 1908.
Length 20 to 21 mm. 5 examples.

D. 5319. N. $21^{\circ}31'$ E. $117^{\circ}53'$, China³⁹⁰⁵
Sea vicinity of Hong Kong. November 5,
1908. Length 26 to 27 mm. 3 examples.

D. 5320. N. $20^{\circ}58'$ E. $120^{\circ}03'$, China Sea
vicinity of Hong Kong. In 1804 fathoms.
November 6, 1908. Length 23 to 33 mm.
3 examples.

41924 U.S.N.M. Cortez Bank, California.
C. H. Eigenmann. Length 50 to 80 mm.
Type (largest) and 3 paratypes.

74718 U.S.N.M.

Albatross Collection (4980). Length 57 mm.

75805 U.S.N.M. N. $31^{\circ}55'$ W. 136°

Albatross Collection (3797). Length 25 mm..

Lampanyctus procerum (Brauer)

Myctophum (Lampanyctus) procerum

Br. 10, Dec. 20,

Brauer, Zool. Anzeiger, vol. 28, 1904, p.

395 (diagnosis in key), p. 402, fig. 9.

Near Agulhas Bank; Deutsch. Tiefsee

Exped. Valdivia, vol. 15, Tiefsee - Fische,

1906, p. 231, fig. 151 (S. $35^{\circ}32'8''$ E. 18°

$20'1''$, 2000 meters). — Pappenheim,

Zool.

Deutsch. Südpolar-Exped., vol. 15, pt. 7,

1914, p. 195 (S. $35^{\circ}10'$ E. $2^{\circ}33'$, 3000 meters).

— Barnard, Ann. South African Mus.,
vol. 21, pt. 1, June 1925, p. 238 (compiled).

Lampanyctus procerum Parr, Bull. Bingham
Oceanogr. Collection, vol. 3, art. 3, Dec. 1928,
p. 79 (diagnosis in key).

Depth $4\frac{4}{5}$; head $3\frac{1}{4}$. Snout $5\frac{2}{5}$ in head; eye $4\frac{2}{5}$, greater than snout; maxillary extends $1\frac{1}{4}$ eye diameters behind eye, length $1\frac{1}{2}$ in head; interorbital very low.

Scales 40 in lateral line, cycloid.

Small antorbital photophore at lower front eye edge; 3 on cheek, upper close before upper edge of preopercle level with upper pupil edge, anterior lower just behind eye close above upper maxillary edge, posterior lower over hind end of maxillary; 2 operculars,

upper little larger, slightly lower
and lower posterior cheek spot or
about level with lower subpectoral;
3 branchiostegals; 6 ventrals, ^{level,} second
interspace greatly longest; 1 suprapectoral,
in nearly vertical series with subpectorals,
midway between lateral line and
upper subpectoral, which slightly
above pectoral fin origin and lower
subpectoral nearer upper than first
or second pectoral spots; 5 ventrals,
level; 1 supraventral, little nearer
lateral line than ventral fin base;

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8 ~~to~~ 9 anals, first anteroanal little lower than following, last 6 posteroanals behind anal fin base; 3 supraanals, in obtuse angle, first over fifth ventral though above level of lower subpectoral, median level with supraventral and lowest posterolateral, below uppermost which close below lateral line; 3 posterolaterals, 2 upper side by side, close below lateral line and first over second which also in vertical line with last anteroanal; 4 precandals, first 3 close and low,

fourth close below end of lateral line.

D. III, 14, first branched ray $1\frac{3}{4}$
 in head; adipose fin $3\frac{2}{5}$; A. III, 18,
 inserted below last $\frac{2}{5}$ of dorsal base
 first branched ray $2\frac{1}{10}$; caudal $1\frac{1}{3}$,
 least depth of caudal peduncle $3\frac{1}{10}$;
 deeply emarginate; pectoral?;
 ventral 2.

Length 22.3 mm.

(Brauer.)

South Atlantic.

Lampanyctus caudispinosus (Johnson)

Scopelus caudispinosus Johnson, Proc. Zool.
Soc. London, vol. 33, 1863, p. 42. Madeira.

— Günther, Cat. Fishes Brit. Mus., vol. 5,
1864, p. 416 (type).

Notoscopelus caudispinosus Goode and
Bean, Oceanic Ichth., 1895, p. 84, pl. 25,
fig. 96 (N. $39^{\circ}26'$ W. $68^{\circ}03'30''$, 1782 fathoms).

Macrostoma caudispinosum Jordan and
Evermann, Bull. U. S. Nat. Mus., no. 47, pt.
1, 1896, p. 556 (compiled).

Lampanyctus caudispinosus Parr,
Bull. Bingham Oceanogr. Collection, vol.
3, art. 3, 1928, p. 79 (diagnosis in key).

Myxtophium elongatus (not Costa)

Smith, Hist. Scandinav. Fishes, ed.

→ 2, 1893-95, p. 937 (part).

↑ Lampanyctus peculiaris Borodin, Proc. New England Zool. Club, vol. 10, Jan. 22, 1929, p. 111. N. 47° 40' W. 37° 20'; 600 fathoms; Bull. Mus. Comp. Zool., vol. 72, no. 3, Aug. 1931, p. 77 (type).

maxillary extends $1\frac{1}{2}$ eye diameters behind eye though not quite to hind edge of well inclined hind preopercle edge, slender, length $1\frac{1}{3}$ in head; interorbital 4, low. Gill rakers 5+11, lanceolate, slender, $1\frac{1}{4}$ in eye; gill filaments 73 of gill rakers.

Scales 36 in lateral line, not enlarged; 3 above, 5 below. Scales

Myctophum elongatus (not Costa)
Smith, Hist. Scandinav. Fishes, ed.
→ 2, 1893-95, p. 937 (part).

Depth $5\frac{1}{8}$; head $3\frac{2}{5}$, width $2\frac{2}{5}$.

Snout in profile 8 in head; eye 4,
greater than snout, equals interorbital;
maxillary extends $1\frac{1}{2}$ eye diameters
behind eye though not quite to hind
edge of well inclined hind preopercle
edge, slender, length $1\frac{1}{3}$ in head;
interorbital 4, low. Gill rakers $5+11$,
lanceolate, slender, $1\frac{1}{4}$ in eye; gill
filaments $\frac{2}{3}$ of gill rakers.

Scales 36 in lateral line, not
enlarged; 3 above, 5 below. Scales

Lampanyctus braueri (Lönnerberg)

Myctophum (Lampanyctus) braueri
Lönnerberg, ~~Wiss. Ergeb. Schwed.~~

~~Südpolar-Exped., vol. 5, pt. 6, 1905, p.~~

Zool. Anzeiger, vol. 28, no. 23, April 25,
1905, p. 764. S. Lat. $48^{\circ}54'$ W. Long. $51^{\circ}40'$;

Wiss. Ergeb. Schwed. Südpolar-Exp.,
vol. 5, Zool. 1, 1905, p. 64, fig. 1 (type). ^

Lampanyctus braueri Regan, Trans. Roy.

Soc. Edinburgh, vol. 49, pt. 2, May 23, 1913,

p. (S. Lat. $69^{\circ}33'$ W. Long. $15^{\circ}19'$ in 2620
"Terra nova"

fathoms); Brit. Antarctic Exped., Zool.,
vol. 1, no. 1, 1914, p. 38 (off Coats Land; S. Lat.
 $49^{\circ}56'$ ~~S. Lat.~~ W. Long. $49^{\circ}56'$). — Waite, Australas.

Antarct. Exped., ^{ser. of Zool. Botany,} vol. 3, pt. 1, Fisher, 1916, p. 61,
fig. 14-14^a (Macquarie Island). — Parri, Bull. Bingham
Oceanogr. Collection, vol. 3, art. 3, Dec. 1928, p. 78 (compiled). ^

very caducous, all fallen.

Apparently small photophore at front eye edge slightly below middle; 2 operculars, upper larger and on line with lower eye edge and pectoral fin origin, lower close behind and below hind maxillary end; 6 pectorals, first interspace twice or more that of others which equidistant; 1 suprapectoral close below lateral line and over first pectoral; 2 subpectorals, lower below pectoral fin origin opposite bases of median pectoral fin rays, upper subpectoral midway between lateral line and pectoral fin origin

over lower; ventrals ?; 7+4 anals,
 all at same level and equidistant,
 posteroanals behind anal fin base;
 2 supraanals, first or lower at last
 third between ventral and anal fin
 origins level with first anteroanal,
 second before anal fin origin, and
 midway in space below lateral line;
 1 posterolateral, behind last anteroanal
 and slightly below lateral line; 3
 precaudals; first and second low,
 at same level, third posterior at end
 of lateral line.

D. III, 21, I, first branched ray $1\frac{1}{4}$
 in head; adipose fin $4\frac{4}{5}$; A. III, 17, I,

first branched ray $1\frac{1}{2}$; caudal $1\frac{1}{4}$?,
well forked; least depth of caudal
peduncle $2\frac{4}{5}$; pectoral $2\frac{2}{3}$; ventral
 $1\frac{2}{3}$.

Brown, largely uniform. Inside
gill opening dusky. Iris pale, with
whitish luminous areas. Fins all pale
or whitish.

Atlantic Ocean. Though Goode
and Bean give "D. 36" their figure shows
IV simple and 22 branched rays. The
photophores have all been rubbed off
of the example here described as well
as most of the scales.

Lampanyctus peculiaris Borodin
said to be nearest the present species
was founded on an example 145 mm. long.

It was distinguished chiefly by the
absence of luminous organs on the head
and the adipose fin feather like or
with conspicuous rudimentary rays.

Though the dorsal is given as ^{having} 15 rays
evidently a variant and possibly the
rudimentary rays were not included.

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43768 U.S.N.M. N. 39° W. 68°

Albatross Collection (155), Length 75 mm.

D. 4640. Mt. Pitt, Chatham
Island, S. 86° W., 65 miles ($0^{\circ}40'$ S.,
 $88^{\circ}11'$ W.), Galapagos Islands, at
[in 1000 to 1500 fathoms] surface.
November 6, 1904. Length 44 to 60 mm.
8 examples.

Lampanyctus margaritiferus (Goode
and Bean)

Notoscopelus margaritiferus Goode and
Bean, Oceanic Ichth., 1895, p. 85, pl. 25,
fig. 98. Off Banguero; Gloucester Donations.

Macrostoma margaritiferum Jordan and
Evermann, Bull. U. S. Nat. Mus., no. 47,
pt. 1, 1896, p. 555 (compiled).

Myctophum (Lampanyctus) margaritiferum
Brauer, Zool. Anzeiger, vol. 28, ^{Apr. 10, Dec. 20,} 1904, p. 395
(diagnosis in key); Deutsch. Tiefsee
Expd. Valdivia, vol. 15, Tiefsee - Fische,
1906, p. 166 (diagnosis in key).

Lampanyctus margaritifer Parr, Bull.
Bingham Oceanogr. Collection, vol. 3, art. 3,

1928, p. 80 (compiled); Proc. U. S. Nat. Mus., vol. 76, 1929, p. 13 (type). ³⁸¹⁹

Depth $5\frac{1}{8}$; head $3\frac{2}{3}$, width $2\frac{1}{2}$.

Snout $7\frac{1}{8}$ in head from snout tip; eye $4\frac{1}{8}$, greater than snout or interorbital; maxillary extends $1\frac{2}{5}$ eye diameters behind eye though not quite to well inclined hind preopercle edge, slender, length $1\frac{2}{5}$ in head from snout tip; interorbital $3\frac{1}{2}$, level. Gill rakers $9+19$, lanceolate, slender, equal eye; gill filaments $\frac{3}{5}$ gill rakers.

Scales 42 in lateral line to caudal base; 4 above, 5 below, 15 predorsal to occiput. Pointed scale in pectoral

axil $3\frac{1}{8}$ in fin. Caudal base scaly.
Scales with 7 basal radiating striae;
circuli fine, complete.

Small narrow antorbital luminous
organ at front upper eye edge; 1 minute
photophore at front eye edge nearly
median; 2 operculars, upper larger
and on line with lower eye edge and
lower subpectoral; 3 veiled equidistant
branchiostegals; 5 pectorals, first
interspace longest, last photophore
slightly elevated and before ventral fin
origin; 1 suprapectoral close below
lateral line and behind first pectoral;
2 subpectorals, upper close above pectoral

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fin origin, lower below and slightly
advanced or before bases of lowest
pectoral fin rays; 5 ventrals, all in
same level; 1 supraventral over first
ventral near lower $\frac{2}{5}$ in space between
lateral line and first ventral spot;
9 + 7 anals, posteroanals all behind
anal fin base; 3 supraanals, first or
lowest rather close over fifth ventral
posteriorly, second still little posterior,
or level with pectoral fin origin,
uppermost close below lateral line over
median or second though both little
before anteroanal; 2 posterolaterals on
same level close below lateral line and

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close together, first or anterior slightly advanced from last anteroanal; 3 precaudals, first and second low, very close at lower rudimentary caudal rays and upper below and behind end of lateral line, separated from second precaudal by interspace. Supracaudal luminous organ long, along most of edge of caudal peduncle.

D. III, 19, I, first branched ray $1\frac{1}{3}$ in total head length; adipose fin 8; A. III, 16, I, first branched ray $1\frac{3}{5}$?; caudal $1\frac{1}{10}$?, forked; least depth of caudal peduncle $2\frac{3}{4}$; pectoral $2\frac{1}{10}$?; ventral $1\frac{3}{5}$?

Largely uniform brown. Iris dull brown. Inside gill opening dusky. Fins pale.

43775 U. S. N. M. Off Bangero.
Gloucester Donation 933. Schooner
Alice M. Williams. Length 118 mm.
Type of Notoscopelus margaritiferus.

of the small Anthurinae and not at all the type found in any species of Caesio. Likewise the squamation, with the presence of numerous small auxiliary basal scales. In most ways the species have an aberrant physiognomy of the Anthurinae.

2 examples. Cagayan Island.

March 31, 1909. Length 83 to 87 mm.

[1491.]

6065. Cagayan Island. March 31, 1909. Length 45 to 85 mm. Lateral below left pectoral axil. 13 examples.

9 examples. Caracaran, Batan Island. June 8, 1909. Length 46 to 95 mm.

15114 to 15117. Dupon Port, Leyte. March 17, 1909. Length 92 to 116 mm.

Lampanyctus elongatus (Costa)

Scopelus elongatus Costa, Fauna Napoli,
Pesci, vol. 1, 1844, p. 2, pl. 35. Tricolano.

— Canestrini, Fauna Italia, Pesci, 1874, p.

126 (Sicily). — Steindachner, Sitzb. Ber.

Akad. Wiss. Wien, Math.-naturw. Klasse, vol. 83,

pt. 1, 1881, p. 397 (Nice). — Storm, Vidensk.

Selsk. Trondheim, 1883, p. 30. — Vinciguerra,

Ann. Mus. Civico Stor. Nat. Genova, vol. 22,

1885, p. 462 (Nice, Genoa, Palermo). —

Raffaele, Mittheil. Zool. Stat. Neapel, vol. 9,

1889, p. 185, pl. 7, fig. 11. — Lilljeborg,

Vidensk. Medd. Naturh. Foren. Kjöbenhavn, 1891,
p. 208 (Trondhjemstord);

— Canestrini, Fauna Italia, Pesci, 1874, p.

Selsk. Skrift, Kjöbenhavn, ser. 6, vol. 7,

Lampanyctus elongatus (Costa)

Scopelus elongatus Costa, Fauna Napoli,
Pesci, vol. 1, 1844, p. 2, pl. 35. Ercolano.

— Canestrini, Fauna Italia, Pesci, 1874, p.

126 (Sicily). — Steindachner, Sitzs. Ber.

Likad. Wiss. Wien, math.-naturw. Klasse, vol. 83,

pt. 1, 1881, p. 397 (Nice). — Storm, Vidensk.

Selsk. Trondheim, 1883, p. 30. — Vinciguerra,

Ann. Mus. Civico Stor. Nat. Genova, vol. 22,

1885, p. 462 (Nice, Genoa, Palermo). —

Raffaele, Mittheil. Zool. Stat. Neapel, vol. 9,

1889, p. 185, pl. 7, fig. 11. — Lilljeborg,

Sveriges och Norges Fauna, Fishes, 1884-

81, p. 25. — Lütken, Kon. Dansk. Vidensk.

Selsk. Skrift, Kjöbenhavn, ser. 6, vol. 7,

no. 6, 1892, p. 264, fig. 23 (Greenland, N. 30° 10' W. 20° 30'; S. 35° E. 19°). — Carus, Prodr.

Fauna Medit., vol. 2, 1893, p. 565 (compiled).

— Goode and Bean, Oceanic Ichth., 1895, p. 83 (rice). — Holt and Byrne, Dep. Agric.

Techn. Instruct. Ireland Scient. Invest.,

no. 6, 1911, p. 24, fig. 7 (outline) (Irish

Atlantic Slope, 375 to 411 fathoms).

Myctophum elongatum Collett, Nyt. Mag.

Naturv. Christiania, vol. 29, 1884, p. 104

(Thronhjems Fjord). — Smitt, Hist.

Scandinavian Fishes, ed. 2, 1893-95, p.

937, fig. 234 (Norway).

Myctophum (Lampanyctus) elongatum

Brauer, Zool. Anzeiger, vol. 28, 1904, p.

395 (diagnosis in key); Deutsch. Tiefsee Exped. Valdivia, vol. 5, Tiefsee - Fische, 1906, p. 232, figs. 152 - 153 (Gulf of Guinea; west of Cape Colony). — Jugmayer, Rés. Camp. Sci. Monaco, vol. 35, 1911, p. 37 (N. $36^{\circ}6'40''$ W. $10^{\circ}18'$, 4749 meters). —

Pappenheim, Deutsch. Südpolar Exped., vol. 15, pt. 2, 1914, p. 196 (off Senegal, 3000 meters). — Barnard, Ann. South African Mus., vol. 21, pt. 1, June 1925, p. 238 (off Cape Point).

Lampanyctus elongatus Taaning, Rep. Danish Oceanogr. Exped. J. Med., no. 15, vol. 2, A. 7, 1918, p. 103, fig. 40 - 41 (Mediterranean, Messina, Atlantic); Vidensk. Medd. Dansk. Naturh. Foren, København, vol. 86, 1928, p. 64 (diagnosis in key; North Atlantic and Mediterranean). —

~~Lampanyctus elongatus~~ Parr, Bull. Bingham

Oceanogr. Collection, vol. 3, art. 3, Dec. ³⁸²⁷ 1928,
p. 80 (note); Proc. U. S. Nat. Mus., vol.
76, 1929, p. 14 (types of Notoscopelus
brachyachir and Notoscopelus quercinus).

— Horman, Discovery Rep., vol. 2, 1930, p. 329
(S. $60^{\circ}58'$ W. $48^{\circ}05'$, 100-150 meters; S. 2°
 $49'30''$ W. $9^{\circ}25'30''$, 800-1000 meters; S.
 $00^{\circ}56'$ W. $14^{\circ}08'30''$, 250 meters; N. $4^{\circ}18'$
 $15''$ W. $16^{\circ}51'$, 100-120 meters).

Scopelus crocodilus (not Risso) Valenciennes,
Hist. Nat. Poiss., vol. 22, 1849, p. (Nice).

~~Oceanogr. Collection, vol. 3, art. 3, Dec. 1928,~~

~~pp. 89 (note)~~

Scopelus kroyeri Halm, Vetensk. Selsk.

Handl. Göteborg, 1863, p. 100. Norway;
Göteborg och Bohusläns Fauna, 1877, p. 539.

Notoscopelus brachychie Eigenmann and

Eigenmann, Notes San Diego Biolog. Lab.,
(p. 3).

Nov. 9, 1889, pages unnumbered, Cortez Banks, San

Diego, California.

Scopelus pseudocrocodilus Moreau, Hist.

Nat. Poiss. France, Suppl., 1891, p. 84, fig.

227.

Notoscopelus quercinus Goode and Bean,

Oceanic Ichth., 1895, p. 83, pl. 26, fig. 97.

Gloucester Fishing vessel; N. Lat. 36° - 41° W.

Long. 67° - 74° , in 677 to 781 fathoms.

Macrostoma quercinum Jordan and
Evermann, Bull. U. S. Nat. Mus., no. 47,
pt. 1, 1896, p. 554 (compiled).

Myxophum (Lampanyctus) quercinum
Brauer, Zool. Anzeiger, vol. 28, 1904, p.
395 (diagnosis in key); Deutsch. Tiefsee
Expd. Valdivia, vol. 5, Tiefsee-Fische,
1906, p. 166 (diagnosis in key).

Lampanyctus elongatus (Costa)

Scopelus elongatus Costa, Fauna Napoli, pesc.,
fasc. 46, 1846, p. 2, pl. 35. Ercolano. — Lütken,
Kon. Dansk. Vidensk. Selsk. Skrift.

Kjöbenhavn, ser. 6, vol. 7, no. 6, 1892, p. 264,
fig. 23 (Atlantic; off Cape Colony).

Notoscopelus elongatus Goode and Bean,
Oceanic Ichth., 1895, p. 83 (diagnosis in key).

Myctophum (Lampanyctus) elongatum Brauer,
Deutsch. Tiefsee Exped. Valdivia, vol. 5,
Tiefsee - Fische, 1906, p. 232, text figs. 152-153
(Gulf of Guinea; west of Cape Colony). —

Barnard, Ann. South African Mus., vol.
21, pt. 1, June 1925, p. 238 (off Cape Point).

Lampanyctus elongatus Parr, Bull. Bingham

Photocypelus ejectus Waite, Records
Australian Mus., vol. 5, pt. 3, 1904, p.
150, pl. 18, fig. 2. Lord Howe Island.

Macrostoma quercinum japonicum Tanaka,
Journ. College Sci. Tokyo, vol. 23, art. 13,
1908, p. 5, pl. 1, fig. 3. In all probability off
Misaki, Province of Sagami.

Lampanyctus japonicus Gilbert, Mem.
Carnegie Mus., vol. 6, no. 2, Aug. 1913, p.
99 (note).

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Depth $4\frac{2}{3}$ to 6; head $3\frac{1}{3}$ to $3\frac{3}{4}$,
width $2\frac{1}{3}$ to $2\frac{1}{2}$. Snout 5 to 8 in head
from snout tip; eye $3\frac{7}{8}$ to 4, greater
than snout, subequal with interorbital;
maxillary extends $1\frac{2}{5}$ eye diameters behind
hind eye edge though not quite to well
inclined hind preopercle edge, slender,
length $1\frac{1}{3}$ to $1\frac{2}{5}$ in head from snout
tip; interorbital $3\frac{3}{5}$ to $3\frac{2}{3}$, low to level.
Gill rakers 7+18, lanceolate, $1\frac{1}{5}$ in eye;
gill filaments $1\frac{1}{4}$ in gill rakers.

Scales 42 in lateral line to caudal
base, not enlarged; 4 above, 4 below,
16 predorsal to occiput. Scales with
many as 5 basal radiating striae;

circuli very fine, complete.

Antorbital luminous body narrow, along upper front eye edge; small photophore at lower front eye edge; 2 operculars, upper large and on level with lower eye edge and lower subpectoral, lower behind and slightly below hind maxillary end; 3 equidistant veiled branchiostegals; 5 pectorals, first interspace longest, all at same level except last which slightly higher or before ventral fin origin; 1 suprapectoral close below lateral line or about upper third between lateral line and pectoral fin origin; 2 subpectorals, first or lower

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close before middle of pectoral fin
base or below bases of lowest pectoral
fin rays, upper close and directly over
pectoral fin origin; 5 or 6 ventrals all
at same level, nearly equidistant; 1
supraventral, about lower third or $\frac{2}{5}$
between lateral line and ventral fin
origin; 8 to 10 + 6 to 8, posteroanals all
behind anal fin base; 3 supraanals,
in slight arc with first or lowest over
last ventral, second little higher and
nearly or quite level with supraventral
and third close below lateral line over
second or opposite anal fin origin; 2
posterolaterals, close together below

adipose fin at same level and close below lateral line; 3 or 4 precaudals as low pair close together at lower rudimentary caudal rays and upper pair or 1 photophore rather close below end of lateral line. Row of 20 or 21 luminous scales along each side of back. Luminous body below pectoral fin base, 1 or 2 above ventral fin origin and 1 close above anal fin origin.

D. IV, 18, I, first branched ray $1\frac{1}{5}$ to $1\frac{2}{5}$ in total head length; adipose fin. $5\frac{1}{5}$ to 6; A. IV, 15, I to III, 17, I, first branched ray $1\frac{2}{5}$ to 2; caudal $1\frac{1}{8}$ to $1\frac{1}{6}$, well forked; least depth of caudal

peduncle $2\frac{1}{2}$ to $3\frac{1}{3}$; pectoral $2\frac{1}{4}$ to $2\frac{1}{2}$;
ventral $1\frac{3}{5}$ to $1\frac{9}{10}$.

Brown, scale pockets darker to
dusky. Iris gray, with whitish luminous
bodies. Opercles and inside gill openings
blackish. Fins whitish, caudal dusky
basally.

Mediterranean, Atlantic and Pacific
Oceans.

40067 U.S.N.M. Nice. Florence.
Museum. Length 117 mm. As Scopelus
elongatus.

43789 U.S.N.M. Gloucester Donation.
Length 110 mm. Type of Notoscopelus quercinus.

49379 U.S.N.M. Nice. M. Bellotti.
No. 179. Length 87 to 92 mm. 4 examples.

76336 U.S.N.M. Cortez Banks, near
San Diego, California. C. H. Eigenmann.
Length 88 mm. Type of Notoscopelus brachycephalus.

82132 U.S.N.M. West edge of Grand
Banks. Schooner "Lizzie". May 7, 1880.
Length 135 mm.

92112 U.S.N.M. From Xiphias gladius
stomach, taken in gully between Brown's

and Georges Banks. Schooner "Alice M. Doughty". Capt. Richard H. Doughty. July 1 to 13, 1931. W. H. Rich. Length 142 to 153 mm. 3 examples.

92115 U. S. N. M. Same locality as preceding. Schooner "Eleanor". Capt. Thomas Brigham. July 5 to August 5, 1931. W. H. Rich. Length 83 to 90 mm. Two large examples comprising only anterior part of body to anal fin. Both show last ventral photophore and first or lowest supraanal at connected scales and without the intervening scale of Lampanyctus hoffmanni.

^{Sarpa}
Lampanyctus hoffmanni new species
Notoscoelus quercinus (part) Goode
and Bean, Oceanic Ichth., 1895, p. 83
 (not fig. 97) (nos. 43790 and 43791 U.S.N.
 M.).

Depth $5\frac{1}{4}$; head $3\frac{1}{2}$, width $2\frac{1}{3}$.
 Snout $6\frac{1}{5}$ in head; eye 4, greater than
 snout, equals interorbital; maxillary
 extends $1\frac{1}{3}$ eye diameters behind hind
 eye edge though not quite to well
 inclined hind preopercle edge, slender,
 length $1\frac{1}{4}$ in head; interorbital 4,
 slightly convex. Gill rakers 6 + 14,
 slender, lanceolate, $1\frac{1}{4}$ in eye;
 gill filaments $\frac{3}{5}$ of gill rakers.

Scales 34? in lateral line to caudal base, not enlarged; 4 above, 4 below, 12 predorsal forward to occiput. Caudal base scaly.

Scales with 5 basal radiating striae; circuli very fine, complete.

Small antorbital photophore at median front eye edge; 2 operculars, upper larger and in line with lower eye edge and pectoral fin origin, lower behind and close below hind end of maxillary; 3 veiled equidistant branchiostegals or median slightly nearer posterior; 5 pectorals, first interspace equal to that between middle and last photophores, all on level except fifth which

flange. Scales with 7 or 8 basal radiating striae; apical denticles 97 to 105, small slender points, with 6 to 15 transverse series of basal elements; circuli very fine.

D. X, 10, I or 9, I, fourth spine $2 \frac{3}{5}$ to $2 \frac{3}{4}$ in total head length; first ray $1 \frac{1}{2}$ to $2 \frac{1}{2}$; A. III, 7, I, third spine $3 \frac{1}{5}$ to $3 \frac{3}{5}$; first ray $2 \frac{7}{8}$ to $3 \frac{1}{8}$; caudal 1 to $1 \frac{1}{10}$, hind edge emarginate; least depth of caudal peduncle $2 \frac{4}{5}$ to $2 \frac{7}{8}$; pectoral $1 \frac{1}{5}$ to $1 \frac{1}{4}$; ventral $1 \frac{1}{5}$ to $1 \frac{1}{3}$.

Brown, pale to whitish below. Pale band across interorbital from one eye to another. Pale diffuse median lateral band indistinct. Fins all pale.

slightly raised and close before ventral fin origin; 1 suprapectoral close below lateral line and nearly in oblique line with subpectorals; 2 subpectorals, first or lower below upper close before bases of lowest pectoral fin ray bases, upper close above pectoral fin origin; 5 ventrals, nearly equidistant, level; 1 supraventral at upper $\frac{2}{5}$ above space below lateral line and ventral fin origin, above level of upper subpectoral and median supraanal; 9+5 anals, posteroanals behind anal fin base; 3 supraanals, first over and

slightly posterior from last ventral
from which separated by single
scale, second or median level with
upper subpectoral over anal fin origin,
third close below lateral line still
above second supraanal; 2 posterolateral,
level, close below lateral line, first
over last anteroanal; 3 precaudals,
first and second close at lower
rudimentary caudal rays, nearly
level and third posterior and
rather close below end of lateral line.
About 6 luminous supracaudal bodies
on rudimentary rays and 8 infracaudal.
Along upper side of back 18 luminous

bodies, one to each scale, anteriorly
8 more on scales along and parallel
with front of lateral line. Luminous
body below pectoral base, 2 above
ventral fin base and 1 above anal
fin origin.

D. III, 20, I, first branched ray
 $1\frac{2}{3}$? in head; adipose fin $5\frac{1}{5}$;
A. III, 16, I, first branched ray $1\frac{2}{3}$?;
caudal $1\frac{1}{5}$?; forked; least depth
of caudal peduncle $2\frac{3}{4}$; pectoral
 $2\frac{2}{5}$?; ventral $1\frac{4}{5}$?

Brown, nearly uniform. Iris
gray, with pale luminous areas.
Fins pale or whitish.

Diagnosis. Related to Lampanyctus
elongatus but distinguished chiefly
by the higher supraventral
photophore and the first
supraanal separated from the

1209

Depth $2\frac{4}{5}$ to $2\frac{7}{8}$; head 3, width 2. Snout $2\frac{4}{5}$ to 3 in head from snout tip; eye $3\frac{1}{8}$ to $3\frac{3}{5}$, equal snout to $1\frac{1}{5}$, subequal with interorbital; maxillary reaches eye or $\frac{1}{4}$ in eye; length $2\frac{2}{3}$ to $2\frac{3}{4}$ in head from snout tip; teeth villiform, in bands; interorbital 3 to $3\frac{1}{3}$, slightly convex; hind preopercle edge strongly denticulate; infraorbital spine moderate. Gill rakers 5+5; short tubercles.

Scales 45 or 46 scales in lateral line and 4 or 5 more on latter; 5 scales above lateral line, 12 below, 30 to 33 predorsal scales forward opposite nostrils, 5 rows on cheek to preopercle ridge and 4 more rows on preopercle

fifth or last ventral by a scale width.

The accompanying figure is based on a paratype originally evidently in Gilbert's possession and not now in the collection of the United States National Museum or returned from Stanford University Museum. According to the scale length given it is a much smaller specimen than the type. Most of the details set forth have been verified in comparison.

Type, No. 43790 U. S. N. M.

6 rows on cheeks of which 2 on preopercle flange. Scales with 12 basal radiating striae; apical denticles 140 to 145, minute points, with 12 to 15 transverse series of basal elements; circuli very fine.

D. X, 9, I, third spine 3 in head, seventh ray $1\frac{4}{5}$; A. III, 7, I, third spine $3\frac{3}{4}$, first ray $2\frac{3}{5}$; caudal $1\frac{1}{5}$, well emarginate; least depth of caudal peduncle $2\frac{4}{5}$; pectoral $1\frac{1}{3}$; ventral $1\frac{1}{3}$.

Pale brown, largely uniform, whitish below. Traces of several parallel gray vertical close set vertical bars on caudal base.

East Indies.

72672 U. S. N. M. Java. Borgant and Palmer. Length 230 mm.

43790 U. S. N. M. N. $36^{\circ}45'W$.

$74^{\circ}28'39''$, Gulf Stream. In 781 fathoms. Albatross Collection (2731). Length 80 mm. Type.

43791 U. S. N. M. N. $41^{\circ}47'W$. 37°

$30'$. In 677 fathoms. Albatross Collection (2528). Length 48 mm. Though in poor preservation I have been able to ascertain that the supraventral photophore is above the middle of the space between the lateral line and the ventral fin origin. The present specimen may therefore be regarded as a paratype.

Named for Prof. . Hoffman
of Lignan University, China.

30607 U. S. N. M. New Guinea.
Australian Museum. Length 184 mm.

56032 U. S. N. M. Bacon. Bureau
of Fisheries (3736). Length 208 mm.

72673 U. S. N. M. Java Bryant
and ~~W~~ Palmer. Length 193 mm.

Lampanyctus resplendens Richardson

Lampanyctus resplendens Richardson,
^{ichth.}

Voy. Erebus and Terror, 1844-48 [before
March 1, 1845], p. 42, pl. 27, figs. 16-18.

Gulf of Guinea. — Taaning, Vidensk.

Medd. Dansk naturh. Foren. København,

vol. 86, 1928, p. 64 (North Atlantic; diagnosis

in key). — Parr, Bull. Bingham Oceanogr.

Collection, vol. 3, art. 3, Dec. 1928, p. 80

(compiled).

Scopelus resplendens Günther, Cat.

Fishes Brit. Mus., vol. 5, 1864, p. 415

(type; Gulf of Guinea). — Collett,

Den norske Nordhav Expedition. Zool. Fisk.,

1880, p.

Notoscopelus resplendens Goode
and Bean, Oceanic Ichth., 1895, p.
83, pl. 25, fig. 94 (compiled; figure
from Richardson).

Scopelus crocodilus (not Risso) Valenciennes,
Hist. nat. Poiss., vol. 22, 1849, p. 447 (part).

Depth $4\frac{1}{2}$; head $3\frac{2}{5}$. Snout $7\frac{1}{2}$
in head; eye $4\frac{1}{3}$, greatly exceeds snout;
maxillary extends $1\frac{2}{3}$ eye diameters
behind eye, narrow, length $1\frac{1}{3}$ in head;
interorbital low.

Scales 38 in lateral line, cycloid.
Scales with 6 basal radiating striae,
edge scalloped; circuli fine, complete.

Opercular photophore slightly
below level of eye or lower subpectoral;

3 branchiostegals; 7 pectorals,
little inclined upward posteriorly;
1 suprapectoral, near upper third
in space between lateral line and
pectoral fin origin, in inclined
line with lower subpectoral and
fifth pectoral spot; 2 subpectorals,
upper about lower third between
lateral line and pectoral fin
origin, in inclined line forward
including lower subpectoral before
and just above middle of pectoral
fin base and third pectoral spot;
5 ventrals, last little elevated; 1
supraventral, nearly midway between

pt. 1, 1925, p. 240 (off Cape Point and
East London, 300 to 800 fathoms).

Depth $4\frac{1}{3}$; head $3\frac{7}{8}$. Snout $9\frac{3}{4}$
in head from snout tip; eye $4\frac{1}{5}$,
greatly exceeds snout; maxillary
extends $1\frac{1}{5}$ eye diameters behind eye,
length $1\frac{1}{2}$ in head; interorbital very
low.

Scales 35 to 37 in lateral line, cycloid.
Cheek with median photophore;
3 branchiostegals; 5 pectorals, first
interspace longest, fourth spot
elevated until little below lower
subpectoral and behind third pectoral;
1 suprapectoral, near upper third

lateral line; 16 anals, continuous,
level, 6 posteroanals behind anal
fin base; 3 supraanals in broad
triangle, first or lower little above
and behind last ventral, second
level with supraventral or much
nearer and below upper which
close below lateral line, ^{both} forming
vertical series with anteroanal;
2 posterolaterals, side by side and
rather close below lateral line; 3
precaudals, first and second low
and side by side, upper little

posterior and close below end of lateral line. Row of $1\frac{1}{2}$ luminous bodies, each above anterior tube of lateral line; $1\frac{1}{2}$ more on row of scales immediately above course of lateral line, first begins after last of lower series.

D. III, 20, first branched ray $1\frac{2}{3}$ in head; adipose fin $5\frac{1}{5}$; A. III, 15, $1\frac{1}{10}$, first branched ray 2; caudal forked; least depth of caudal peduncle $2\frac{2}{5}$; pectoral $1\frac{3}{5}$; ventral 2.

Length 100 mm.

North Atlantic.

(Richardson.)

Atlantic Ocean. Jaaning gives
6 or 7 supracaudal luminous bodies
and as many infracaudals,
luminous scale below lower
subpectoral, 1 or 2 between
ventral fin and supraventral
photophore, 1 before anteroanals,
on back 2 longitudinal rows of
about 25 scales and laterally
above forepart of lateral line
10, below posterolaterals 2 and
2 in supraanal series.

1292
5113, 5114. Sandakan market,
Borneo. March 4, 1908. Length 196 to
198 mm.

13239, 13240. Makassar market,
December 24, 1909. Length 196 mm.

Lampanyctus castaneus (Goode and Bean).

Notoscopelus castaneus Goode and Bean, Oceanic Ichth., 1895, p. 85, pl. 25, fig. 95. N. $39^{\circ}57'$ W. $70^{\circ}37'$, 192 fathoms; Gloucester Stations.

Macrostoma castaneum Jordan and Evermann, Bull. U. S. Nat. Mus., no. 47, pt. 1, 1896, p. 556 (compiled).

Myctophum (Lampanyctus) castaneus Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, Tiefsee-Fische, 1906, p. 166 (diagnosis in key).

Lampanyctus castaneus Parr, Bull. Bingham Oceanogr. Collection, vol. 3,

art. 3, 1928, p. 81 (note); Proc.³⁸⁵²
U. S. Nat. Mus., vol. 76, 1929, p. 14
(type).

Depth $4\frac{7}{8}$ to 5; head $3\frac{4}{5}$ to 4, width 2 to $2\frac{1}{8}$. Snout in profile 7 to $7\frac{1}{4}$ in head; eye $3\frac{7}{8}$ to $4\frac{3}{5}$, greater than snout, equals interorbital; maxillary reaches $1\frac{1}{2}$ to $1\frac{3}{5}$ eye diameters beyond eye though not quite to greatly inclined hind preopercle edge, slender, length $1\frac{1}{3}$ to $1\frac{2}{5}$ in head ^{from snout tip}; interorbital $3\frac{1}{4}$ to 4, low. Gill rakers $11 + 18$, lanceolate, slender, equals eye; gill filaments $\frac{3}{5}$ of gill rakers.

Scales 42 in lateral line to caudal base, not enlarged; 3 above, 5 below,

12? predorsal to occiput. Ventral with pointed axillary scale $3\frac{1}{6}$ in fin. Caudal base scaly. Scales very caducous, most all fallen.

Small antorbital narrow luminous body along upper front eye edge; small preorbital photophore at lower front eye edge; 2 operculars, upper larger, in line from lower eye edge and lower subpectoral; 3 large veiled equidistant basibranchials; 5 pectorals, first interspace twice or more than others, fifth pectoral before and slightly posterior from first or lower subpectoral; 2 subpectorals, first or

lower below pectoral fin origin
opposite and before bases of lowest
pectoral fin rays; upper subpectoral
close above pectoral fin origin over
lower subpectoral and both well before
second pectoral photophore; 5 ventrals,
equidistant, close, at same level;
1 supraventral, little nearer ventral
fin origin than lateral line or at
level of upper subpectoral; 9+8
anals, first anteroanal slightly below
level of others, posteroanals all behind
anal fin base; 3 supraanals, first or
lowest little higher than lower subpectoral
and behind last ventral, second still

3855

higher or level with supraventral
below third or uppermost which
close below lateral line opposite
vent; 3 posterolaterals close together,
about same level close below lateral
line, first above eighth anteroanal; 3
precaudals, first low and at same
level, very close together, third rather
close below and behind end of lateral
line. Long luminous supracaudal organ
with 3 small bodies at upper rudimentary
caudal rays; 22 luminous scales along
front of back. Luminous bodies below
upper opercular photophores, below
pectoral base, above ventral base and

above anal origin.

D. III, 17, I or III, 18, I, first branched ray $1\frac{2}{5}$? in head; adipose fin $4\frac{1}{2}$; A. III, 16, I, first branched ray $1\frac{1}{2}$; caudal evidently little greater than head, well forked; least depth of caudal peduncle $2\frac{3}{4}$ to $2\frac{4}{5}$; pectoral $2\frac{1}{6}$; ventral $1\frac{4}{5}$.

Color brownish, scale pockets darker. Inside of gill opening dusky. Iris dark brown, with pale luminous areas. Fins pale to whitish.

Atlantic Ocean.

31706 U.S.N.M.

3857

Bureau of Fisheries (1113). Length 130 mm.

In very poor preservation.

44518 U.S.N.M. Le Have Bank.

Gloucester Donation. (Questioned as

21688 U.S.N.M?) Length 151 mm. Very

poorly preserved.

3458

Lampanyctus supralateralis Parr
Lampanyctus supralateralis Parr,
Bull. Bingham Oceanogr. Collection,
vol. 3, art. 3, Dec. 1928, p. (81) 94, fig.

12. N. 23° to 24° W. 76° to 77° , 7000 to
8000 feet.

Depth $4\frac{2}{5}$; head 3. Snout $7\frac{1}{5}$
in head from snout tip; eye $3\frac{1}{3}$, greatly
exceeds snout; maxillary extends $\frac{3}{5}$
eye diameter behind eye, slender, length
 $1\frac{3}{5}$ in head from snout tip; interorbital
low, eye greatly impinging on upper
profile.

Scales 35 in lateral line, not
conspicuously enlarged on caudal peduncle.

3859

Opercular photophores 2, upper
below level of eye, little above
line from eye to lower subpectoral;
5 pectorals, first interval longest,
fourth spot elevated over and before
fifth pectoral until level with
lower subpectoral; 1 suprapectoral,
^{close} above lateral line,
in nearly vertical line with subpectorals
passing well before second pectoral;
2 subpectorals,
lower subpectoral little nearer second
pectoral than upper, which close
before upper base of pectoral fin;
5 ventrals, second elevated though little

lower than fourth pectoral and ^{with 3868} other
3 spots form slightly inclined series
down and back to fourth; 1 supraventral,
level with upper subpectoral little
before first ventral; anals 5+4,
last anteroanal slightly elevated,
posteroanals behind anal fin base;
3 supraanals, series slightly angulate,
first and second spots form inclined
line with last ventral spot, equally
spaced so median midway in space
to lateral line, third close above
lateral line nearly over and little

3861

behind median; 2 posterolaterals,
in inclined line passing behind last
anteroanal, first or lower spot closer
to last anteroanal and upper spot
close above lateral line; 3 precaudals,
lower 2 close and third close above
end of lateral line. Supracaudal
luminous scales 1 to 3, infracaudal
3 to 6. Four luminous plates along
each side of anal fin base.

D. 13; A. 15, inserted close behind
dorsal fin base; pectoral $2\frac{3}{5}$ in body
without caudal.

Length 28 mm. without caudal. (Parr.)
Western Atlantic.

^{Serpa}
Lampanyctus blacki new species

Depth $3\frac{7}{8}$ to $4\frac{1}{2}$; head $2\frac{3}{5}$ to $2\frac{7}{8}$, width $2\frac{2}{5}$ to $2\frac{3}{5}$. Snout 6 to $7\frac{1}{5}$ in head from snout tip; eye $3\frac{1}{2}$ to $3\frac{4}{5}$, greater than snout or interorbital; maxillary reaches $\frac{3}{4}$ to $\frac{7}{8}$ eye diameters behind eye though not to slightly inclined hind preopercle edge, expansion $2\frac{4}{5}$ to $3\frac{1}{4}$ in eye, length $1\frac{1}{2}$ in head from snout tip; interorbital $4\frac{1}{4}$ to 6, level. Gill rakers $10 + 14$, slender, lanceolate, $1\frac{2}{5}$ in eye; gill filaments $1\frac{1}{2}$ in gill rakers.

Scales 30 in lateral line, not enlarged; 3 above, 4 below, 11 predorsal

forward to occiput. Caudal base
scaly. Scales with 3 basal radiating
striae; circuli fine, complete.

Small antorbital photophore at
front eye edge; 2 operculars, greatly
separated, upper little larger, high
or on line with lower eye edge and
upper subpectoral, lower behind and
little below hind maxillary end; 3
veiled equidistant branchiostegals;
5 pectorals, first interspace longest,
fourth well elevated or just below level
of pectoral fin base and over last
pectoral anteriorly; 1 suprapectoral
on lateral line little before first or

lower subpectoral; 2 wide set
subpectorals, first or lower slightly
advanced and below upper, though
slightly nearer second pectoral than
upper subpectoral, which close before
bases of median pectoral fin rays;
5 ventrals, second elevated though
much lower than fourth pectoral,
little nearer third than first; 1
supraventral about upper $\frac{2}{5}$ between
lateral line and ventral fin base;
5 + 4 anals, posteroanals all behind
anal fin base; 3 supraanals, first
behind last ventral and slightly
below level of second ventral, second

little above and little posterior also greatly closer to first, third on lateral line little behind anal fin origin; 2 posterolaterals, first or lower little higher than last anteroanal and posterior, also much nearer last anteroanal, upper on lateral line slightly posterior; 3 precaudals, 2 lower close at lower rudimentary caudal rays with second little elevated and third little above end of lateral line. Supracaudal luminous scales 2, infracaudals 2 to 4, also 5 or 6 along each side of front anal base. D. III, 9, I or III, 10, I, first branched

ray $1\frac{4}{5}$ to $1\frac{7}{8}$ in total head length;
 adipose fin $4\frac{1}{3}$ to $5\frac{1}{5}$; A. III, 10, I or
III, 12, I, first branched ray 2 to $2\frac{3}{4}$?;
 caudal $1\frac{1}{4}$?, forked; least depth of
 caudal peduncle $3\frac{1}{5}$ to $3\frac{1}{2}$; pectoral
 $1\frac{1}{8}$ to $1\frac{1}{3}$; ventral $2\frac{1}{8}$ to $2\frac{1}{5}$.

Brown, scale pockets variably
 darker. Inside gill opening blackish.
 Iris gray, with whitish luminous
 areas. Fins pale or whitish.

Diagnosis. Greatly like Lampanyctus
longipes (Brauer) except that the
 supraventral photophore much lower
 or its position about upper $\frac{2}{5}$ in space
 between ventral origin and lateral line

3867

(very close below lateral line in Lampanyctus longipes). In this respect it is more like Lampanyctus nigrum (Günther) but that species with 7 posteroanal photophores, the present species like Lampanyctus longipes or only with 3 or 4. Moreover the suprapectoral of the present species is variably above or close below the beginning of the lateral line. It further differs from Lampanyctus longipes in the absence of postocular photophores and its more widely spaced opercular photophores, the upper quite high or nearly level with

lower eye edge.

Type, no.

U. S. N. M.

D. 5507. Camp Overton Light, Iligan Bay (Mindanao), S. 1° E., 8.6 miles (N. $8^{\circ} 21' 12''$ E. $124^{\circ} 12' 6''$). In 425 fathoms.

August 4, 1909. Length 68 to 80 mm.

3 examples. Type and paratypes.

D. 5185. Lusaran Light, N. 23° E., 25.50 miles (N. $10^{\circ} 5' 45''$ E. $122^{\circ} 18' 30''$), between Panay and Negros. In 638 fathoms.

March 30, 1908. Length 33 mm.

D. 5227. Port Orizon, S. 44° E., 18.30 miles (N. $12^{\circ} 53' 45''$ E. $121^{\circ} 52' 30''$), east of Mindoro. In 322 fathoms. May 5, 1908. Length 32 to 42 mm. 2 examples.

Lampanyctus photothorax Parr ³⁸⁶⁹

Lampanyctus photothorax Parr, Bull.
Bingham Oceanogr. Collection, vol. 3, art.
3, 1928, p. (81) 95, fig. 13. N. 23° to 32°

W. 64° to 77° , 4000 to 10000 feet. — Horman,
Discovery Rep., vol. 2, 1930, p. 329
(S. $35^{\circ}14'$ E. $6^{\circ}49'$, 850 to 1100 meters; S.
 $00^{\circ}46'$ E. $5^{\circ}49'15''$, 850 to 950 meters).

Depth $4\frac{1}{4}$; head 3. Snout 10 in
head from snout tip; eye 3, greatly
exceeds snout; maxillary extends $\frac{1}{2}$
eye diameter behind eye, length $1\frac{3}{5}$
in head from snout tip; interorbital
low, eye impinging on upper profile.

Scales 36 or 37 in lateral line,
not conspicuously enlarged on tail.

Three minute photophores along hind

3870
eye edge sometimes; 5 pectorals,
first interval longest, fourth elevated
till about level with first supraanal,
over last pectoral interval; 1
suprapectoral close below lateral
line in line with 2 subpectorals,
which wide set, upper close before
pectoral fin base and lower above
and little before second pectoral spot;
though nearer latter than upper
subpectoral; 5 ventrals, second
elevated till but little lower than
fourth pectoral, behind first ventral;

3871

1 supraventral close below lateral line over first ventral; anals 4 to 7 + 4 or 5, sometimes last anteroanal elevated, posteroanals behind anal fin base; 3 supraanals, in broadly angulate series, lower or first above or somewhat before last ventral, second level with upper subpectoral which close above lateral line; 2 posterolaterals, in inclined line passing behind last anteroanal, first much nearer last anteroanal and second close above lateral line; 3 precaudals, first and second close,

3872

low, third close above end of lateral line. Variable luminous bodies, as 1 scale above base of pectoral fin, another close below lower subpectoral photophore, 1 above ventral fin axil, 3 along dorsal fin base, 3 larger ones along anal fin base. Supracaudal luminous scales 3, infracaudal 3.

D. 13; A. 14, fin origin below hind basal end of dorsal; pectoral $2\frac{2}{5}$ in combined head and body to caudal base.

Length to 56 mm. without caudal. (Parr.)

North and South Atlantic, West Indies.

Lampanyctus longipes (Brauer)
Myctophum (Lampanyctus) longipes Brauer,
 Deutsch. Tiefsee Exped. Valdivia, vol. 15,

Tiefsee - Fische, 1906, p. 236, text fig. 155.
 N. $31^{\circ}59'3''$ W. $15^{\circ}5'$; N. $0^{\circ}25'8''$ E. $7^{\circ}0'3''$,

off Madeira; Gulf of Guinea; south and
 S. $26^{\circ}3'6''$ E. $93^{\circ}43'7''$; S. $10^{\circ}8'2''$ E. $97^{\circ}14'9''$ N. $7^{\circ}1'2''$ E. $85^{\circ}56'5''$,
 north of Cocos Islands; Bay of Bengal;
 N. $4^{\circ}56'$ E. $78^{\circ}15'3''$ S. $4^{\circ}5'8''$ E. $73^{\circ}24'8''$; S. $4^{\circ}5'8''$ E. $70^{\circ}1'9''$,
 south of Ceylon; Chagos Archipelago;
 S. $2^{\circ}43'8''$ E. $61^{\circ}14'6''$; S. $4^{\circ}34'8''$ E. $53^{\circ}42'8''$,
 Seychelles.

Lampanyctus longipes Parr, Bull.
 Bingham Oceanogr. Collection, vol. 3, art. 3,
 Dec. 1928, p. 82 (note).

Lampanyctus pyrosobolus longipes Taaning,
 Vidensk. Medd. Dansk. Naturh. Foren.,
 vol. 86, 1928, 65 (diagnosis in key).

3874

Depth $3\frac{7}{8}$ to 4; head $3\frac{1}{8}$ to $3\frac{1}{5}$, width 2 to $2\frac{1}{5}$. Snout $5\frac{3}{5}$ to $6\frac{2}{3}$ in head; eye $2\frac{4}{5}$ to $3\frac{1}{10}$, greater than snout or interorbital; maxillary reaches but slightly behind eye but falls well short of nearly vertical hind preopercle edge, expansion $2\frac{1}{3}$ to 3 in eye, length $1\frac{3}{5}$ to $1\frac{4}{5}$ in head; interorbital 4 to $4\frac{1}{5}$, level. Gill rakers 5+14, lanceolate, slender, $1\frac{3}{4}$ in eye; gill filaments $\frac{2}{3}$ gill rakers.

Scales 31 or 32 in lateral line to caudal base, not enlarged though with hind ends straight or truncate; 4 above, 3 below, 10 predorsal forward to occiput.

Ventral with small axillary scale
3 3/4 in fin. Caudal base scaly.
Scales with 7 short basal marginal
radiating striae; circuli fin, complete.

Large antorbital luminous body
median on snout above and opposite
greater upper front orbital edge; 3
postorbital photophores rather close
behind eye and parallel with its hind
edge, also fourth lower close along lower
posterior edge; 2 opercles, upper larger
and on line from lower eye edge passing
about midway between subpectorals,
lower well below hind maxillary end;
3 equidistant veiled branchiostegals;

3876

5 pectorals, first interspace longest,
fourth spots well elevated though
slightly lower than upper subpectoral
over interspace between third and fifth
pectorals; 1 suprapectoral close below
lateral line over to slightly behind
upper subpectoral; 2 subpectorals,
first or lower slightly advanced from
upper, little nearer upper than pectorals;
5 ventrals, second elevated nearly level
with fourth pectoral over interspace
between first and third; 5 + 4 anals,
first interspace of anteroanals longest,
posteroanals all behind anal fin base;
3 supraanals, first or lowest over and

slightly before fifth ventral, second
little higher over vent and third close
above lateral line opposite anal fin
origin; 2 posterolaterals, first or lower
closer to last anteroanal slightly
behind last anal ray base, upper
close above lateral line little before
first posteroanal; 3 precaudals,
first and second at bases of lower
rudimentary caudal rays with second
slightly elevated, third close above end
of lateral line. Supracaudal luminous
scales 2, infracaudals 2. Luminous
scale in each ventral axil and 1 or 2
at front of anal fin.

D. III, 9, I, first branched ray $1\frac{1}{2}$
 to $1\frac{3}{5}$ in head; adipose fin $3\frac{1}{8}$ to
 $3\frac{1}{3}$; A. III, 9, I to III, 10, I, first
 branched ray $2\frac{1}{2}$?; caudal forked;
 least depth of caudal peduncle $2\frac{1}{5}$
 to $2\frac{2}{5}$; pectoral $1\frac{1}{5}$; ventral $1\frac{1}{2}$ to $1\frac{4}{5}$.

Brown. Muzzle, inclusive of
 mandible, whitish. Iris gray with
 whitish luminous areas. Fins all
 whitish.

Atlantic and Indian Ocean. Brauer
 gives anal photophores 4 to 6 + 3 to 5,
 D. 11 to 13, A. 13 to 15.

D. 5544. Coronado Point, S. 37°
W., 21.5 miles ($8^{\circ}16'30''$ N., $122^{\circ}26'$
 $30''$ E.), northern Mindanao and
vicinity, in 759 fathoms. September 6,
1909. Length 58 mm.

D. 5544. Coronado Point, S. 37° ³⁸⁷⁹

W., 21.5 miles (N. $8^{\circ}16'30''$ E. $122^{\circ}26'30''$), northern Mindanao.

In 759 fathoms. September 6, 1909.

Length 57 mm.

D. 5185. Lusaran Light, N. 23°

E., 25.50 miles (N. $10^{\circ}5'45''$ E. $122^{\circ}18'30''$), between Panay and Negros.

In 638 fathoms. March 30, 1908.

Length 40 mm.

2 examples. Philippines. Length
163 to 174 mm.

6504, 14713. Port Calton, Busuanga
Island. December 15, 1908. Length 185 to
188 mm.

6293, 6294, 7057. Romblon, March
25, 1908. Length 142 mm.

14765. Romblon. March 26, 1908.
Length 134 mm.

5935 to 5937, 16974, 16975. Sabtan
Island. November 8, 1908. Length 200
to 210 mm.

17548. Sorsogon market. March
12, 1909. Length 165 mm.

4897. Talajit Island, Buang Bay.
March 15, 1909. Length 180 mm.

Lampanyctus gaussi (Brauer)

Myctophum (Lampanyctus) gaussi Brauer,
Deutsch. Tiefsee Exped. Valdivia, vol. 5,
Tiefsee-Fische, 1906, p. 235, text fig. 154.
Deutschen Südpol-Expedition. — Pappenheim,

Deutsch. Südpolar Exped., vol. 15, Zool. pt.
7, 1914, p. 196 (S. $14^{\circ}3'$ W. $19^{\circ}10'$, 1900 meters;
S. $32^{\circ}8'$ W. $8^{\circ}28'$, 1000 meters; N. $0^{\circ}46'$ W. $18^{\circ}59'$, 3000 meters; N. $5^{\circ}27'$ W. $21^{\circ}41'$, 1500 meters).

↑ Lampanyctus gaussi var. mediterranea Borodin,
Bull. Vanderbilt Oceanogr. Mus., vol. 1, art. 1,
1928, p. 12. Sardinia, Mediterranean Sea.

and quite to hind edge of steeply inclined
preopercle edge, length $1\frac{2}{5}$ in head;
interorbital depressed, apparently level.
Scales cycloid.

Lampanyctus gaussi (Brauer)

Myxtophnum (Lampanyctus) gaussi Brauer,

Deutsch. Tiefsee Exped. Valdivia, vol. 5,

Tiefsee-Fische, 1906, p. 235, text fig. 154.

Deutschen Südpol-Expedition. — Pappenheim,

Lampanyctus gaussi Parr, Bull. Bingham

Oceanogr. Collection, ser. 3, art. 3, Dec. 1928,

p. 82 (note).

Depth $4\frac{4}{5}$; head $3\frac{1}{2}$. Snout 6 in head; eye $3\frac{4}{5}$, greater than snout; maxillary reaches not quite eye diameter beyond eye and quite to hind edge of steeply inclined preopercle edge, length $1\frac{2}{5}$ in head; interorbital depressed, apparently level.

Scales cycloid.

Pappenheim, Deutsche Südpolar
Exped., vol. 15, pt. 2, 1914, p. 194
(south west of Ascension Island;
south west of St. Helena); east of

Lampany

Oceanogr.

p. 82 (note

depth

head, eye

reaches no

and quite

3881

Small antorbital photophore
slightly inferior on front eye edge;
2 operculars, upper little larger and
in line with lower eye edge and lower
subpectoral, lower behind and little
below hind maxillary end; 3 equidistant
veiled branchiostegals; 5 pectorals,
first interspace longest, fourth spot
elevated though not quite level with
upper subpectoral but little behind third
pectoral which quite close behind second;
1 suprapectoral, close below lateral line
before though on line with subpectoral;
2 subpectorals, upper close before bases
of superomedian pectoral fin rays;

3882

6 ventrals, second elevated till level
with lower subpectoral and little
behind first ventral; 1 supraventral
close below lateral line over and
slightly before second ventral; 4 to 6 +
5 or 6 anals, posteroanals behind
ventral fin base; 3 supraanals, first
or lowest higher than second ventral
over and slightly behind fifth ventral,
second still little higher or midway
in line with sixth ventral and uppermost
close below lateral line opposite anal
fin origin; 2 posteroanals, first or
lower behind and above last anteroanal
and upper close below lateral line

opposite adipose fin origin; 4 precaudals, first 2 low, third little higher and uppermost close below end of lateral line. Each side of dorsal and anal bases ³3 luminous scales, 1 between last pectoral and first ventral photophores, 6 infracaudals besides upper and lower rudimentary caudal rays.

D. IV, 10, first branched ray $1\frac{3}{4}$ in head; adipose fin 3; A. III, 11, first branched ray 2; caudal 1, deeply forked; least depth of caudal peduncle $2\frac{7}{8}$; ventral 2; pectoral reaches middle of anal, $2\frac{3}{4}$ in combined head and body to caudal base. Length 38 mm. (Bratner.) Atlantic Ocean.

2811
Lampanyctus güntheri Goode and Bean³⁸⁸⁴
Lampanyctus güntheri Goode and Bean,
Oceanic Ichth., 1895, p. 79, pl. 24, fig. 90.

Gloucester Fleet. — Waite, Trans. New
Zealand Inst., vol. 42, 1909, p. 372

(Kermadec Islands). — Parr, Bull.

Bingham Oceanogr. Collection, vol. 3, art. 3,
1928, p. 82 (diagnosis in key), Proc. U.

S. Nat. Mus., vol. 76, 1929, p. 14, fig. 5

(type) — Borodin, Bull. Mus. Comp. Zool., vol. 72,
no. 3, Aug. 1931, p. 77 (N. 33° W. 64°, 1200 meters; N. 37° W. 67° 12', 1500 meters).

Lampanyctus güntheri Jordan and
Evermann, Bull. U. S. Nat. Mus., no. 47, pt.
1, 1896, p. 559 (compiled).

Myctophum (Lampanyctus) güntheri

Brauer, Zool. Anzeiger, vol. 28, 1904, p.

395 (diagnosis in key); Deutsch.
Tiefsee Exped. Valdivia, vol. 15,
Tiefsee - Fische, 1906, p. 166 (diagnosis
in key).

Myctophum (Lampanyctus) güntheri
Pappenheim, Deutsch. Südpolar-Exped.,
= Zool. 7, p. 5. 14° 3' W. 19° 10',
vol. 15, 1914, 196 (south west of Ascension
Island, 1900 meters, N. 17° 28' W. 29° 42',
north west Cape
Verde Islands, 3000 meters).

Lampanyctus guentheri Taaning, Vidensk.
Medd. Dansk naturh. Foren. København,
vol. 86, 1928, p. 65 (North Atlantic; diagnosis
in key). — Horman, Discovery Rep., vol. 2,

1930, p. 329 (S. $48^{\circ}09'$ W. $52^{\circ}50'$, 90 meters;
S. $45^{\circ}06'$ W. 49° , 90 meters; S. $39^{\circ}50'30''$ W.
 $36^{\circ}23'$, 1500 meters; S. $46^{\circ}36'30''$ W. $45^{\circ}07'$,
40 meters; S. $40^{\circ}34'30''$ W. $36^{\circ}35'30''$, 152
meters; S. $39^{\circ}16'30''$ W. $30^{\circ}26'$, 124 meters;
S. $18^{\circ}37'$ E. $10^{\circ}46'$, 100 to 150 meters; S. $00^{\circ}46'$
E. $5^{\circ}49'15''$, 850 to 950 meters; S. $2^{\circ}13'$ E. $1^{\circ}52'$,
71 meters; S. $3^{\circ}06'30''$ W. $3^{\circ}53'$, 125 meters; S.
 $00^{\circ}56'$ W. $14^{\circ}08'30''$, 250 meters; N. $3^{\circ}04'45''$
W. $16^{\circ}52'$, 125 to 225 meters; N. $4^{\circ}18'15''$ W. 16°
 $51'$, 100 to 120 meters; N. $8^{\circ}12'$ W. $18^{\circ}49'$, 120
meters; N. $12^{\circ}08'$ W. $20^{\circ}53'30''$, 163 meters).

Lampanyctus melanothorax Parr, Bull.

Bingham Oceanogr. Collection, vol. 3, art. 3,
1928, p. (82) 98, fig. 14. N. 21° to 24° W.
 71° to 77° , 4000 to 8000 feet.

Deutsch. Hüdipolar Exped., vol. 15,
Zool. 7, 1914, p. 197 (south of Azores, 10 meters).

— Barnard, Ann. South African Mus.,
vol. 21, pt. 1, June 1925, p. 239 (off Cape
Point).

Lampanyctus niger Parr, Bull. Bingham
Oceanogr. Collection, vol. 3, art. 3, Dec. 1928,
p. 87 (note); Proc. U. S. Nat. Mus., vol. 76, 1929, p.
20 (note).

? Hannobranchium macdonaldi Goode and

Bean, Oceanic Ichth., 1895, p. 94, pl. 29, fig.

110. L. Lat. $39^{\circ}48'$ W. Long. $70^{\circ}36'$, in 551

fathoms (Gulf Stream)

3887

Depth $5\frac{1}{4}$ to $5\frac{2}{5}$; head $3\frac{1}{2}$, width $2\frac{2}{3}$ to $2\frac{3}{4}$. Snout 7 to 8 in head; eye $4\frac{1}{8}$, greater than snout, $1\frac{1}{5}$ in interorbital; maxillary extends back $1\frac{1}{8}$ to $1\frac{2}{3}$ eye diameters behind eye though not quite to well inclined hind preopercle edge, slender, length $1\frac{1}{3}$ to $1\frac{2}{5}$ in head; interorbital $3\frac{1}{2}$ to 4, low. Gill rakers $6+12$, lanceolate, slender, equal eye; gill filaments $\frac{1}{2}$ gill rakers.

Scales 38 in lateral line, well enlarged; 3 above, 4 below, 15 predorsal to occiput. Scales with 4 basal radiating striae; circuli very fine, complete.

Small median antorbital luminous photophore little below middle at front eye edge; 2 operculars, upper in line with lower eye edge and lower subpectoral, lower below and behind hind maxillary end, equally large and distinct as upper; 3 veiled equidistant branchiostegals; 5 pectorals, first interspace longest, fourth photophore over and little posterior from third or just below level of pectoral fin base; 1 suprapectoral close below lateral line before and on line with both subpectorals; lower subpectoral about midway between upper and second pectoral, upper

3889
opposite and close before upper median
pectoral fin ray bases; 5 ventrals,
second little elevated or level with fourth
pectoral, behind second pectoral spot;
1 supraventral close below lateral line
opposite first ventral; 5 + 5 or 6 anals,
posteroanals behind anal fin base;
3 supraanals, first lowest though little
above level of second ventral and
over space between fourth and fifth
ventrals, second still little higher
and third close below lateral line
before first anteroanal; 2 posterolaterals,
lower above and behind last anteroanal
and upper close below lateral line

3890
before front of adipose fin; 3 or 4
precaudals, last or fourth close
behind end of lateral line, others
little inclined progressively along lower
rudimentary caudal rays. Infracaudal
luminous bodies 5 on lower rudimentary
caudal rays, also 6 luminous scales
anteriorly; 6 luminous bodies along
each side of dorsal base, 3 along front
of adipose fin basally, 3 or 4 along
anal base and small one in ventral
fin axil.

D. III, 10, I, first branched ray $1\frac{1}{4}$
in head; adipose fin $3\frac{1}{2}$ to $4\frac{2}{5}$; A.
III, 11, I, first branched ray $2\frac{1}{10}$;

caudal $1\frac{1}{6}$?, well forked; least depth of caudal peduncle $3\frac{1}{4}$ to $3\frac{1}{2}$; ventral 2?; pectoral $3\frac{1}{8}$? in combined head and body to caudal base.

Brown. Iris pale. Fins all paler than body or whitish. Inside gill opening dusky.

Atlantic, Pacific and Antarctic Oceans. According to Parr the anal is furnished with 3 large basal luminous plates, usually 3 or 4 smaller on dorsal base, 1 or 2 minute plates also before adipose fin and latter basally with high luminous plate; 5 supracaudal spine-supported luminous glands; 5 to 7 small flat infracaudal luminous scales behind anal fin, with 7 or 8 spine supported luminous glands at front edge of caudal.

43777 U.S.N.M. Gloucester 3892
Fleet (199). Length 48 mm. Type
of Lampanyctus güntheri.

86128 U.S.N.M. Gulf of Mexico.
Grampus Collection (10482). March 22,
1917. Length 49 mm.

89909 U.S.N.M. N. 33° W. 64°

Museum of Comparative Zoology. Station 322.
Length 65 mm. Caudal longer than head
or $2\frac{4}{5}$ in combined head and trunk to
caudal base; pectoral $2\frac{3}{5}$.

Lampanyctus subpectoralis Parr

Lampanyctus subpectoralis Parr,
Bull. Bingham Oceanogr. Collection,
vol. 3, art. 3, 1928, p. (82) 101, fig. 15.

N. $24^{\circ}29'$ W. $77^{\circ}29'$; 8000 feet.

Depth $5\frac{1}{4}$; head $3\frac{3}{4}$. Snout
 $7\frac{1}{2}$ in head from snout tip; eye 5,
greater than snout; maxillary extends
 $1\frac{3}{4}$ eye diameters behind eye, narrow,
length $1\frac{1}{3}$ in head from snout tip;
interorbital low.

Scales 37 in lateral line, greatly
enlarged on tail.

Opercular photophores 2, upper
nearly level with lower eye edge;

3894
5 pectorals, interval between third
and fifth longest, fourth spot
little above level of lower subpectoral,
close behind or above third spot;
1 suprapectoral little below lateral
line before upper subpectoral; 2
subpectorals, lower before and little
nearer second pectoral, upper
advanced and little before and below
pectoral fin origin; 5 ventrals,
second elevated till level with lower
subpectoral; 1 supraventral, close
below lateral line, little before

3895

first ventral; anals 5+6, level,
posteroanals behind anal fin base;
3 supraanals, first above last
ventral interspace, higher than
fourth pectoral, second higher and
behind last ventral, uppermost
close below lateral line well before
first anteroanal; 2 posterolaterals,
in inclined line ^{before} passing last anteroanal,
though ^{first spot} nearer latter than uppermost
close below lateral line; 4 precaudals,
lower 2 close, side by side, third
little higher and posterior, fourth

over third below end of lateral line. Supracaudal luminous scales 5 and vestige, infracaudals $1\frac{1}{2}$. Luminous scale close below pectoral base, one in ventral axil and 3 along each side of dorsal and anal bases, latter larger.

D. 13; A. 15, origin opposite last third of dorsal base; least depth of caudal peduncle $3\frac{4}{5}$ in total head; pectorals damaged, probably quite long.

Length without caudal 35mm. (Parr.)

Western Atlantic.

Lampanyctus photonotus Parr. ³⁸⁹⁷

Lampanyctus photonotus Parr, Bull.
Bingham Oceanogr. Collection, vol. 3,
art. 3, 1928, p. (83) 102. N. $22^{\circ}43'$ W. 74°
 $23'$, 8000 feet.

Depth $5\frac{1}{5}$; head $3\frac{3}{4}$. Snout $10\frac{1}{5}$
in head from snout tip; eye $6\frac{7}{8}$,
greater than snout; maxillary extends
3 eye diameters behind eye, length
 $1\frac{2}{5}$ in head from snout tip; interorbital
very low.

Scales 37 in lateral line, scarcely
enlarged on caudal peduncle.

Cheek with 2 photophores, upper
level with eye center and midway in

space to lower as measured in ³⁸⁹⁸
vertical, lower ^{above and} little before hind
maxillary end; 5 pectorals, fourth
elevated level with pectoral fin
origin ~~or~~ over last pectoral interval,
first pectoral interval longest,
third shortest; 1 suprapectoral,
close below lateral line, well before
subpectorals; 2 subpectorals, in
inclined line with suprapectoral and
second pectoral, close together before
pectoral fin base; 4 ventrals, level;
1 supraventral, nearly level with
fourth pectoral, over ^{first ventral;} ~~and little behind~~

3899

anals 6 + 7, anteroanals curved
upward, posteroanals all behind
anal fin base and continuous with
precaudals; 3 supraanals, in
broadly angulate series, first and
second level with supraventral,
first over second ventral interval,
second behind last ventral spot and
third close below lateral line over
first anteroanal; 2 posterolaterals,
in inclined line with last anteroanal,
first or lower close above last anteroanal,
upper close below lateral line; 4